FVAP RESEARCH NOTE

Data Standardization and the Impact of Ballot Transmission Timing and Mode on *UOCAVA* Voting

Introduction

The Federal Voting Assistance Program (FVAP), under the authority of the *Uniformed and Overseas Citizens Absentee Voting Act* (*UOCAVA*), works to ensure that Service members, their eligible family members, and overseas citizens are aware of their right to vote and have the tools and resources to successfully do so, from anywhere in the world. To better understand what resources and policy improvements are necessary to further this goal, FVAP facilitates systematic collections of *UOCAVA*-related data that can be generalized to the larger population. FVAP administers Post-Election Voting Surveys (PEVS) of key stakeholder populations after each federal election and collaborates with the Election Assistance Commission (EAC) on the *UOCAVA* portion (Section B) of its Election Administration and Voting Survey (EAVS), which answers important *UOCAVA* research questions.[1] For *UOCAVA* ballot requesters, one of the largest obstacles to voting is the amount of time necessary to send their completed ballot back to their local election official (LEO) so that their vote is returned and counted. The severity of this *UOCAVA* voting duration barrier can be difficult to understand because an individual's ballot travels by different modes, either mail or electronically, depending on state regulations, ballot request choices, or even the type of *UOCAVA* voter he or she is.

***UOCAVA* Ballot Requesters**—Either active duty military (ADM) members who are located outside their voting jurisdictions or overseas citizens, each of whom requested an absentee ballot in 2016.

Ballot Return—Individuals have a record from their state or local election office that the ballot arrived at the office before the state absentee voting deadline.

Ballot Rejection—Individuals returned their ballot after the state absentee voting deadline or have a record from their state or local election office that their ballot was rejected.

The Military and Overseas Voter Empowerment (MOVE) Act of 2009 requires jurisdictions to transmit blank ballots to *UOCAVA* ballot requesters 45 days before a federal election, with the goal of providing enough transmission time to ensure sufficient time to vote. To better assist *UOCAVA* voters who want to complete the absentee voting process, FVAP seeks to understand the timing and mode elements surrounding this 45-day transmission policy and how it relates to two outcomes: (1) returning a ballot, and (2) ensuring a ballot is not rejected. Each outcome is an important part of successfully completing the absentee voting process. "Ballot return" is defined here as *UOCAVA* ballot requesters having a record from their state or local election office that the ballot arrived at the office before the state absentee voting deadline. In some cases, individuals could return a ballot but still not have their vote counted, known as "ballot rejection." Although ballots can be rejected for a number of reasons, *the MOVE Act* seeks to mitigate the instances of ballot rejection due to ballots

[1] See more on the PEVS data from 2016 PEVS-ADM Technical Report, available at https://www.fvap.gov/uploads/FVAP/Reports/PEVS_ADM_TechReport_Final.pdf; the 2016 PEVS-VAO Technical Report, available at https://www.fvap.gov/uploads/FVAP/Reports/PEVS_VAO_TechReport_Final.pdf; and the 2016 PEVS-SEO Technical Report, available at https://www.fvap.gov/uploads/FVAP/Reports/PEVS_SEO_TechReport_Final.pdf

arriving after the state deadline.

In order to evaluate the impact of ballot transmission time on completing the absentee voting process, FVAP requires individual-level data that can associate specific *UOCAVA* ballot request experiences with the voters themselves. To date, the tools available to collect data on *UOCAVA* voters' experiences have been somewhat limited. This is changing, however, as jurisdictions are increasingly recognizing the power of harnessing information they already collect in existing election management systems to produce more targeted data on the circumstances surrounding individual ballots. This takes some additional effort and coordination, but the jurisdictions that have been able to seize the opportunity are being rewarded with deep insights into their own voters' experiences.

To help better assist *UOCAVA* voters, FVAP and the Council of State Governments (CSG) worked to refine an ambitious and transformative new data source called the Election Administration and Voting Survey (EAVS) Section B (ESB) Data Standard. The ESB Data Standard builds on other data standardization efforts and allows FVAP to analyze the three key parts of the voting process: (1) ballot request, (2) ballot transmission, and (3) ballot return. The initial goals of the ESB Data Standard were to understand the breadth of the data that jurisdictions already collected as well as to identify the challenges that needed to be overcome to facilitate analyses about the request, transmission, and return process. The entire project, including the standard development and the analyses relating to it, acts as a proof of concept for collecting individual-level data on questions similar to the question content of the EAC EAVS data.

To that end, under FVAP's guidance, states now have the option of making transactional-level data on *UOCAVA* ballots available through the ESB Data Standard. This standard addresses and overcomes a number of previous concerns with existing *UOCAVA* data. The ESB Data Standard captures data from state databases, a process that has the advantage of more accurately assessing *when* ballot transactions occurred and *whether* ballot requests and returns were ultimately returned. In contrast, voters answering FVAP's PEVS may experience recall issues about specific absentee ballot process dates, mailing delays, and an inability to know if their voted ballot was received and ultimately accepted for counting. The combination of all these factors all make it difficult to assess the impact of ballot transmission time from a voter's perspective. The ESB Data Standard also makes it easier to assess the multivariate effects impacting individual voters, while still maintaining the ability to count key metrics at the jurisdiction and state levels. The EAVS can report aggregate totals at the state and jurisdiction levels on ballot receipt and transmission time, but aggregate totals may blur all effects experienced by voters into a single statewide estimate.[2] The ESB Data Standard is the first approach of its kind to drill drown to the transactional level and attempt to identify drivers for *UOCAVA* voter success since the passage of *the MOVE Act*.

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[2] EAVS data are aggregated at the jurisdiction and state levels by election officials based on a data collection template. For more information on the EAVS Section B, see page 105 of The Election Administration and Voting Survey: 2016 Comprehensive Report, available at https://www.eac.gov/assets/1/6/2016_EAVS_Comprehensive_Report.pdf

This research note is organized into the following sections:

- Key Research Questions
- Data Standardization and *UOCAVA* Ballot Transmission Policy
- Methodology
- Analysis
- Discussion and Conclusions

The analysis begins with an examination of the overall ballot request population and the timing of the ballot receipt date. After showing the wide distribution in ballot request receipt dates, all subsequent analyses are conducted on those who requested their ballot after January 1, 2016. A descriptive analysis then follows showing the association between ballot transmission time and both ballot return and ballot rejection. The research note next describes the association between transmission mode and both ballot return and ballot rejection. The final analysis uses logistic regression to study the interaction effect between ballot transmission timing and transmission mode on completing the absentee voting process (i.e., returning a ballot on time and without rejection).

The analyses here find that:

- Voters varied widely in when they requested ballots. More than two-thirds (69%) of ballot requests were received at least 45 days before the election—4% waited until the week before the November 2 election.
- Voters who received their ballots earlier were slightly more likely to return them and their ballots had less chance of being rejected for inaccuracy or lateness.
- Voters who received their ballots by mail were slightly more likely to return them than voters who received their ballots electronically, even after controlling for all other factors.

Although these findings are based on just a subset of jurisdictions and voters, they demonstrate the power of transactional-level data like the ESB Data Standard for providing insights into the election process. Going forward, FVAP and its state and local partners will be working to help more communities explore the process of generating standardized data and make this information more widely available nationwide.

Ballot Transmission Timing—Whether a ballot was transmitted early or late based on if it was transmitted to a voter at least 45 days before the election.

Ballot Transmission Mode—The method by which a blank ballot was sent to a *UOCAVA* ballot requester, including mail or electronic modes.

Key Research Questions

This analysis seeks to answer the following questions:

- What is the impact of ballot transmission timing on the likelihood of ballot return and rejection? How does this vary by jurisdiction?
- What is the impact of ballot transmission mode on ballot return and rejection? How does this vary by jurisdiction?
- What is the combined impact of ballot transmission timing and ballot transmission mode on ballot return and rejection?

Data Standardization and *UOCAVA* Ballot Transmission Policy

Data standardization is the process by which data are described and recorded in a consistent format. It is based on the principle that research design and conduct should not conflict to ensure that objective scientific findings are non-contradictory and replicable. With standardization, it becomes possible to conduct more large-scale, collaborative research since one can collect and compare data from multiple sources. It also reduces the possibility of researchers introducing their own bias. For example, standardization has been extremely useful in the uniform adoption of certain question formats and procedures among interviewers working on the same study.[3] Various institutions and entities, including the Federal Government, have recognized the usefulness of data standardization. In May 2014, the Digital Accountability and Transparency Act (DATA) instituted standards to improve the quality of data on federal spending and submit them in common computer readable formats.[4] And in September 2016, the General Services Administration (GSA) launched the U.S. Data Federation to "support government-wide data standardization and data federation initiatives across both Federal agencies and local governments."[5]

Studies of election data standardization at the state level have identified key interoperability issues with analyzing administrative voting data. "Interoperability" refers to the ability of a product or system to communicate, exchange data, and interact in other ways with separate products or systems without problems. Not all election management systems can export data in a standard format, such as a comma-separated value (CSV) file.[6] When data cannot be exported in a standardized format, integrating various data sources for both federal agencies and researchers becomes quite difficult. Another contributing problem for the establishment of standardized data is inconsistency in naming conventions: different jurisdictions refer to the same data field using different terms. For example, imagine a data set that collected data from multiple jurisdictions pertaining to the number of ballots that were accepted or rejected by local election offices. If one jurisdiction considered a ballot returned without rejection (if it has a ballot return date and leaves this field missing if the ballot is rejected), whereas another jurisdiction uses a separate field to indicate if each ballot was rejected or accepted, it could possibly confuse those using the data and should be reformatted. Since election records are typically designed to manage elections, a

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[3] See Darin Weinberg. (2007). Standardization. *The Blackwell Encyclopedia of Sociology*.

[4] See https://api.usaspending.gov/.

[5] Ashley Nash-Hahn. (2016). GSA Launches Data Federation as Part of Open Government Efforts. GSA.gov. Available at https://www.gsa.gov/node/83377

[6] This problem is discussed in Data Migration Tool: A CSG Overseas Voting Initiative Report, available at http://www.csg.org/OVI/documents/data_migration_online.pdf

dedicated tool like the ESB Data Standard is needed to export election data in a manner that can overcome interoperability issues and instead facilitate analyses.

FVAP is one of multiple stakeholders leading the effort to standardize election data. The National Institute of Standards and Technology (NIST) has worked for more than a decade to develop a common data standard for elections, starting with adapting the OASIS Election Markup Language (EML) for use in U.S. elections and, eventually, developing the NIST Election Results Reporting Common Data Format.[7] NIST is also developing common data formats for cast vote records, election event logging, election results reporting, voter records interchange, election business process modeling, and voting methods.[8] Additionally, the Voting Information Project (VIP) developed its own standard format beginning in 2008 to disseminate voting location and ballot information more easily by making data "interoperable across platforms and applications".[9] And starting in 2015, FVAP began working with CSG's Overseas Voting Initiative (OVI) to develop an election results standard that could sufficiently capture individual-level data about voters covered by *UOCAVA*. The goal of this effort was to make it easier for elections data to be reported in a common, individual-level transaction format, which allows for more innovative data analyses and supports FVAP's ongoing focus on customer service. Through the continued implementation of the ESB Data Standard, stakeholders such as FVAP and election officials will be able to answer individual-level questions related to recent legislative changes and specific stages of the absentee ballot process for *UOCAVA* ballot requesters.

The MOVE Act

The MOVE Act was intended to address the problems associated with the absentee ballot process duration by requiring all states to transmit ballots at least 45 days before a federal election to *UOCAVA* citizens who have already requested a ballot. This legal change was designed to address the problems associated with *UOCAVA* ballots being received by the local election office too late to be counted.[10] *UOCAVA,* as modified by *the MOVE Act,* requires states to:

> *"…establish procedures for transmitting by mail and electronically blank absentee ballots to absent uniformed services voters and overseas voters with respect to general, special, primary, and runoff elections for Federal office… [and] transmit a validly requested absentee ballot to an absent uniformed services voter or overseas voter… in the case in which the request is received at least 45 days before an election for Federal office, not later than 45 days before the election."*[11]

The *MOVE Act* also required states to send blank absentee ballots to citizens electronically, if the citizen requests electronic delivery. Specifically, the law states that:

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[7] See https://www.nist.gov/itl/ieee-standards-working-group-p1622-voting-systems-electronic-data-interchange-worked-examples for an example of EML and http://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.1500-100.pdf for a description of the Election Results Reporting Common Data Format.

[8] See https://github.com/usnistgov/Voting

[9] See https://votinginfoproject.org/projects/vip-5-specification/

[10] For a discussion of this problem, see R. Michael Alvarez, Thad E. Hall, and Betsy Sinclair. (2008). Whose absentee votes are returned and counted: The variety and use of absentee ballots in California. *Electoral Studies*. *27*, 4: 673–683.

[11] See §20302(a)(7) of UOCAVA. Available at https://www.fvap.gov/uploads/FVAP/Policies/uocavalaw.pdf.

> "*...in addition to any other method of registering to vote or applying for an absentee ballot in the State, [each state must] establish procedures... for absent uniformed services voters and overseas voters to request by mail and electronically voter registration applications and absentee ballot applications with respect to general, special, primary, and runoff elections for Federal office... for States to send by mail and electronically (in accordance with the preferred method of transmission designated by the absent uniformed services voter or overseas voter... [on their] voter registration applications and absentee ballot applications... and by which the absent uniformed services voter or overseas voter can designate whether the voter prefers that such voter registration application or absentee ballot application be transmitted by mail or electronically*."
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> If "*the request is received less than 45 days before an election for Federal office [the ballot is to be transmitted]... in accordance with State law; ...and as determined appropriate by the State, in a manner that expedites the transmission of such absentee ballot*.[12]

This section of *the MOVE Act* stresses the importance of ballot transmission timing and mode for improving the absentee voting process. In general, it suggests that if a ballot request is received 45 days before an election, it will be transmitted early and will have a chance of being transmitted by the preferred mode of the ballot requester: either by mail or electronically. Database issues or other unforeseen issues may lead to discrepancies in meeting these transmission expectations, but the ESB Data Standard data can help jurisdictions understand how they can continually improve on expectations related to the timing and mode of transmitted ballots.

Ballot Transmission Timing and Ballot Return and Rejection

UOCAVA voters must complete the multistep absentee ballot process that can take potentially a month and a half or more to complete. Research suggests that stakeholders need to be highly cognizant of when ballots are transmitted.[13] A January 2009 Pew Charitable Trusts report examined the amount of time that it would take voting materials to complete each step of the *UOCAVA* voting process and compared this to the date in each state when blank absentee ballots were sent to *UOCAVA* voters. The study determined that the deadline for sending blank ballots to voters in 16 states and the District of Columbia did not provide *UOCAVA* citizens with enough time to receive their ballot and return it.[14] The report found that it took an average of 29 days for ADM overseas to complete the absentee ballot process and up to 88 days in certain states. This suggests that when controlling for state differences, early ballot transmission should be associated with higher levels of ballot return and lower levels of ballot rejection.

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[12] See §20302(a)(7) of UOCAVA. Available at https://www.fvap.gov/uploads/FVAP/Policies/uocavalaw.pdf.

[13] Pew Center on the States. (2009). No Time to Vote: Challenges Facing America's Overseas Military Voters. Available at http://www.pewtrusts.org/~/media/legacy/uploadedfiles/wwwpewtrustsorg/reports/election_reform/ nttvreportwebpdf.pdf

[14] Pew Center on the States. (2009). No Time to Vote: Challenges Facing America's Overseas Military Voters. Available at http://www.pewtrusts.org/~/media/legacy/uploadedfiles/wwwpewtrustsorg/reports/election_reform/ nttvreportwebpdf.pdf

Ballot Transmission Mode and Ballot Return and Rejection

The effect of transmitting a ballot early is complicated by differences in ballot transmission mode. *UOCAVA* ballot requesters may receive their blank ballot from their LEO by multiple modes: email, mail, fax, or web portal. In general, it is understood that transmission via mail extends the absentee ballot process duration over electronic transmission.[15] All states offer email ballot transmission and postal mail transmission, and 44 states allow for blank ballot transmission by fax or a web portal.[16] When voters submit their ballot request application, they are asked for their preferred ballot transmission mode. The Federal Post Card Application (FPCA) specifically asks, "How do you want to receive materials from your election office?" and includes three options: (1) mail, (2) email or online, and (3) fax. If this is unchecked, jurisdictions rely on their default ballot transmission method for *UOCAVA* ballot requesters. Ballot transmission mode, therefore, varies based on both individual preference and state policies on blank ballot transmission mode.

Methodology

Data were collected in this analysis from 14 states and jurisdictions via the ESB Data Standardization template.[17] These localities were asked to provide all of their data at a transactional level, meaning providing all ballot requests and ballot transmissions, even if there were duplicates, per voter. The 2016 ESB Data Standard included 27 requested data fields. However, to reduce burden, most localities provided their data in the most convenient way possible and did not reconstruct their database to conform to this database. These 14 localities were individually cleaned to standardize the formatting and missingness so locality data sets would conform to the ESB Data Standard.[18] All localities were then merged and coded for missing variables values. Data were not imputed. The final merged data set contained 348,364 ballot requests at a transactional level.

Data were representative of exported data sets by localities as of October 2017.[19] For all analyses, 112,197 cases were dropped because of the following rules in order: (1) ballot transmission date was missing; (2) ballot transmission date was after the election, or ballot transmission date was after the ballot return date; (3) a voter had multiple transactions; (4) ballot was returned in person; or (5) entire locality export was insufficient for analyses. The final analysis data set contains 236,167 cases that are at both the transactional and voter levels.

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[15] Pew Center on the States. (2009). No Time to Vote: Challenges Facing America's Overseas Military Voters. Available at http://www.pewtrusts.org/~/media/legacy/uploadedfiles/wwwpewtrustsorg/reports/election_reform/ nttvreportwebpdf.pdf

[16] A web portal allows *UOCAVA* voters to download their ballot using a user name and password provided to them by their election official. Some web portals only allow for a PDF of the ballot to be downloaded, but others are more dynamic, allowing the voter to mark the ballot and then print it for mailing. Not all states that allow a web portal may have implemented one.

[17] Jurisdictions were provided a CSV template file with date field headers and were directed to the CSG EAVS Data Standardization template (Revision c4e80398) available at https://eavs-section-b-data-standard.readthedocs.io/en/latest/csv/index.html.

[18] The main differences between the collected jurisdiction data and the analytic data sets involved (1) converting string data fields to numeric fields with value labels; (2) backcoding open-ended "other" fields using content coding; (3) grouping redundant values within a variable; (4) parsing out timestamps from date fields; (5) identifying problem cases by creating validation flags, which are based off the expected temporal order of date fields; (6) coding missing variables; and (7) coding additional values that did not conform to the ESB Data Standard values.

[19] Participating localities worked with FVAP researchers to review and resolve discrepancies in this analysis and re-export 2016 General Election data. However, it is necessary to establish a single point in time to conduct and report analyses.

The analyses in this research note use two dependent variables: ballot return and ballot rejection. Ballot return is conceptualized as a ballot arriving back to an election office from a *UOCAVA* voter and having a record of being received for the 2016 General Election on time. As described in Table A1 of Appendix A, ballot return was coded as a dichotomous variable, in which 1 indicates returned by the latest state absentee deadline and 0 indicates not returned, based on whether or not a ballot had a non-missing ballot return date.[20] Ballot rejection is conceptualized as either a ballot being returned too late or an on-time returned ballot being reviewed by an election official, but ultimately deemed rejected for any reason and thus not counted for the 2016 General Election. Ballot rejection was coded as a dichotomous variable, in which 1 indicates rejected and 0 indicates not rejected, based on whether or not a ballot had non-missing values for ballot rejection type or ballot rejection other type. In the regression analyses, both reported rejection and late return rejection were evaluated as separate dependent variables.

The focal independent variables tested in this research are ballot transmission time and ballot transmission mode. Ballot transmission time is conceptualized as the number of days an election official transmitted a blank ballot to a ballot requester before the 2016 General Election. In the descriptive analyses, ballot transmission time was coded as a dichotomous variable, in which 1 indicates early transmission, based on whether a voter had a ballot transmission date on or before September 24, 2016, and 0 indicates late transmission, based on whether a voter had a ballot transmission date after September 24, 2016. In the regression analyses, ballot transmission time is coded as a continuous variable equal to the total number of days a ballot was transmitted to a voter before the 2016 General Election. Ballot transmission mode is conceptualized as the type of delivery method an election official used to send a ballot requester his or her blank ballot. Ballot transmission mode is coded as a dichotomous variable, in which 1 indicates mail transmission mode and 0 indicates all other transmission modes, including email, online, fax, and other modes.

It is hypothesized that (1) early ballot transmission should be associated with higher levels of ballot return and lower levels of ballot rejection based on increased voting time, after accounting for relevant confounding factors; and that (2) electronic transmission mode should be associated with higher levels of ballot return and lower levels of rejection, based on increased voting time due to a shorter transmission duration.

To help reduce the possibility of incorrectly claiming an effect of ballot transmission time or ballot transmission mode due to a biased sample or unconsidered factor, this study controlled for available demographic differences contained in the 2016 ESB data standardization data. *UOCAVA* type is a dichotomous variable, with 1 indicating military and 0 indicating overseas citizen ballot requesters. Because prior research has shown that ADM and overseas citizens exhibit strong differences in voting behavior, motivation, geography, and demographics, the models are also estimated separately for each *UOCAVA* population. Ballot request type indicates whether a ballot requester used an FPCA, state ballot request, or other form. Locality is an indicator of state or jurisdiction. By holding constant demographic differences such as *UOCAVA* type, ballot request type, and locality, this analysis was able to isolate and study the variation in the primary variables of

[20] Each locality was assigned the latest possible return date for an absentee ballot based on the 2016–2017 *Voting Assistance Guide* deadlines. This varied between November 8 and November 28, 2016. This slightly overestimates on-time return rate by ignoring mode-specific or domestic-specific variations in state deadlines for absentee ballots.

interest. The regressions do not account for factors FVAP has shown are key to understanding *UOCAVA* voting beyond demographic differences, such as motivation, absentee resource use, overseas mailing reliability, and social connectivity.[21]

The analyses use both descriptive statistics and logit regression. Logit models use fixed effects for localities and standard errors are clustered by locality. Marginal effects and predicted probabilities are reported. By including these fixed effects, this analysis was again able to hold constant the differences across localities that are unrelated to the primary variables of interest, relying on the variation across localities associated with ballot transmission time and mode to answer key questions. Analyses were not weighted and are representative of only participating localities with valid data. Descriptive analyses of ballot transmission and its association with ballots returned and rejected are limited to ballot requesters who requested a ballot in 2016. Analyses of ballot rejection are further limited to ballot requesters with a record of returning a ballot. Reported regression results are analyzed five ways: (1) including all *UOCAVA* ballot requesters; (2) limiting to only permanent ballot requesters, meaning *UOCAVA* who requested a ballot before January 1, 2016; (3) limiting to non-permanent ballot requesters, or *UOCAVA* who requested a ballot on or after January 1, 2016; (4) limiting to ADM non-permanent ballot requesters; and (5) limiting to overseas citizen non-permanent ballot requesters.

Analysis

1. Overall Demographics

Ballot transmission timing is directly affected by timing of ballot requests received from *UOCAVA* voters. A ballot cannot be transmitted early if it is (1) not requested or (2) not requested before the 45-day deadline. Across all localities, 236,167 transactions were recorded as absentee ballot requesters and had valid data. The 2016 EAVS Comprehensive Report lists that 930,156 ballots were transmitted to all *UOCAVA* voters (see Appendix C for EAVS comparison to ESB Data Standard).[22] Ballot requests do not always lead to ballot transmissions, as some of these requests may be duplicative or rejected from processing; however, using this rough proxy denominator, this data set captures between 20% and 25% of the 2016 *UOCAVA* ballot requester population depending on how missing data are treated.

Figure 1 shows the number of absentee ballot requests for the 2016 General Election by each of the participating localities with valid ballot requester data. Washington and New York had the most absentee ballot requests in the 2016 ESB Data Standard sample, with 80,388 individuals in Washington State and 52,056 individuals in New York who requested an absentee ballot.

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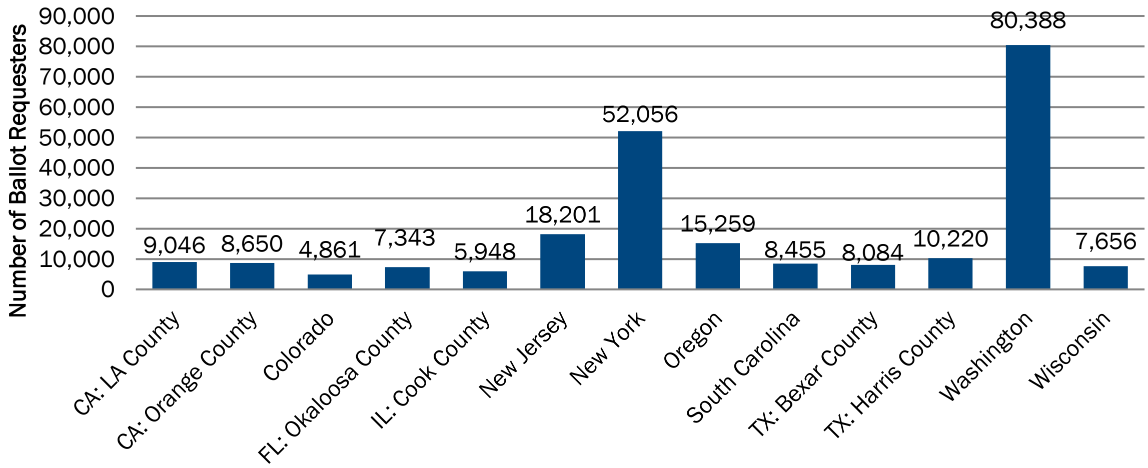
[21] FVAP. (2017). Measuring Obstacles to Voting for UOCAVA ADM: Introducing the UOCAVA Gap. Available at https://www.fvap.gov/uploads/FVAP/Reports/UOCAVAGapResearchNote_20171204_final.pdf; FVAP. (2016). FVAP Resource Use and Experience Among Overseas Citizens in the 2014 Election. Available at https://www.fvap.gov/uploads/FVAP/Reports/ResourceUseResearchNote_20161031.pdf; FVAP. (2016). International Mailing Systems and Voting by Overseas Citizens. Available at https://www.fvap.gov/uploads/FVAP/Reports/ResearchNoteInternationalMail_20161128_final.pdf

[22] U.S. EAC. (2016). The Election Administration and Voting Survey: 2016 Comprehensive Report. Available at https://www.eac.gov/assets/1/6/2016_EAVS_Comprehensive_Report.pdf

Figure 1: *UOCAVA* Ballot Requests by Participating Jurisdiction

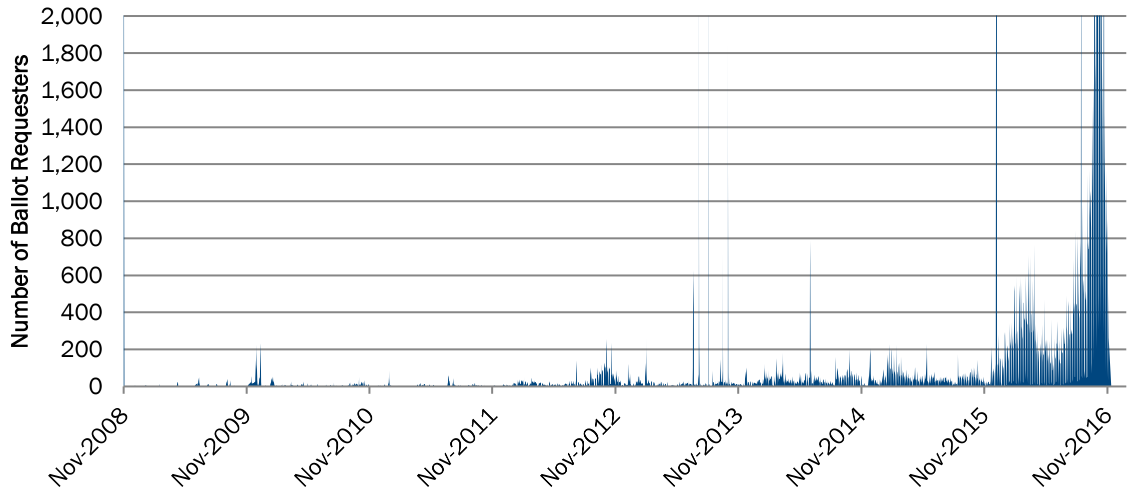


Note: Displays the total number of unique cases listed in the localities' voter file, interpreted as they at least requested an absentee ballot. Some individuals did not have ballot request or ballot processing data, but did have a ballot transmission record. Due to exclusion rules, this should be an underestimate of each locality's *UOCAVA* ballot requester population. Missing data for North Carolina.

The date *UOCAVA* jurisdictions received ballot requests for the 2016 General Election varies widely. Figure 2 displays the number of ballot requests received by participating localities for the 2016 General Election from November 4, 2008, until the end of 2016.[23] Although 67% of ballot requests on file were in the year preceding the election, about 2% were received before the 2008 General Election, 5% between the 2008 and 2012 General Elections, and 26% between the 2012 General Election and January 1, 2016. These permanent ballot requests predominantly came from Washington, New York, Orange County, CA, and Okaloosa County, FL.

[23] Note that this graph is representative of the volume of ballot requests for only the 2016 election because it is the latest date of ballot request. A person who requested in both September 2012 and September 2016 would only have a record listed for the later date.

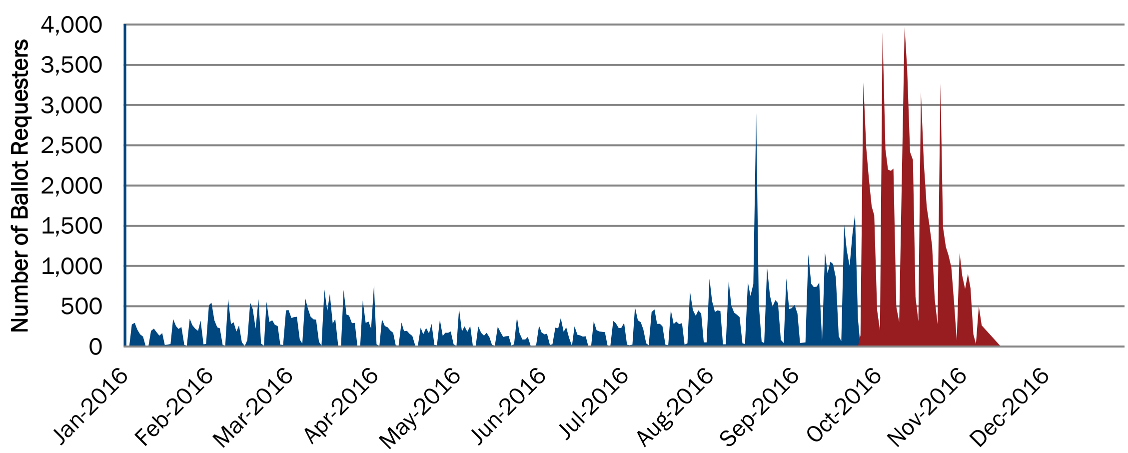
Figure 2: *UOCAVA* Ballot Request Date for the 2016 General Election



Note: *N* = 212,817, limited to cases with a valid ballot request received date. Figure axis limited at 2,000 despite a daily max of 3,973 ballots requested for the 2016 General Election. A total of 3,398 ballot requests were received before the November 4, 2008, election and were bottom-coded as November 4, 2008.

Figure 3 displays the same distribution in Figure 2, isolated to ballot requests received after January 1, 2016. From January 1 until August 18, 2016, participating localities received about 500 or fewer ballot requests per day. In addition to this normal volume from other localities, Cook County, IL, reported receiving 2,252 ballot requests on August 18, 2016. The red area in Figure 3 depicts ballot requests received after September 24, 2016—the 45-day deadline. A total of 31% of all ballot requests received by localities were received after the 45-day deadline. When splitting these last 45 days into 15-day periods, approximately 13% of all ballot requests were received from September 25 to October 9, 13% were received from October 10 to October 24, and 4% were received from October 25 or later.

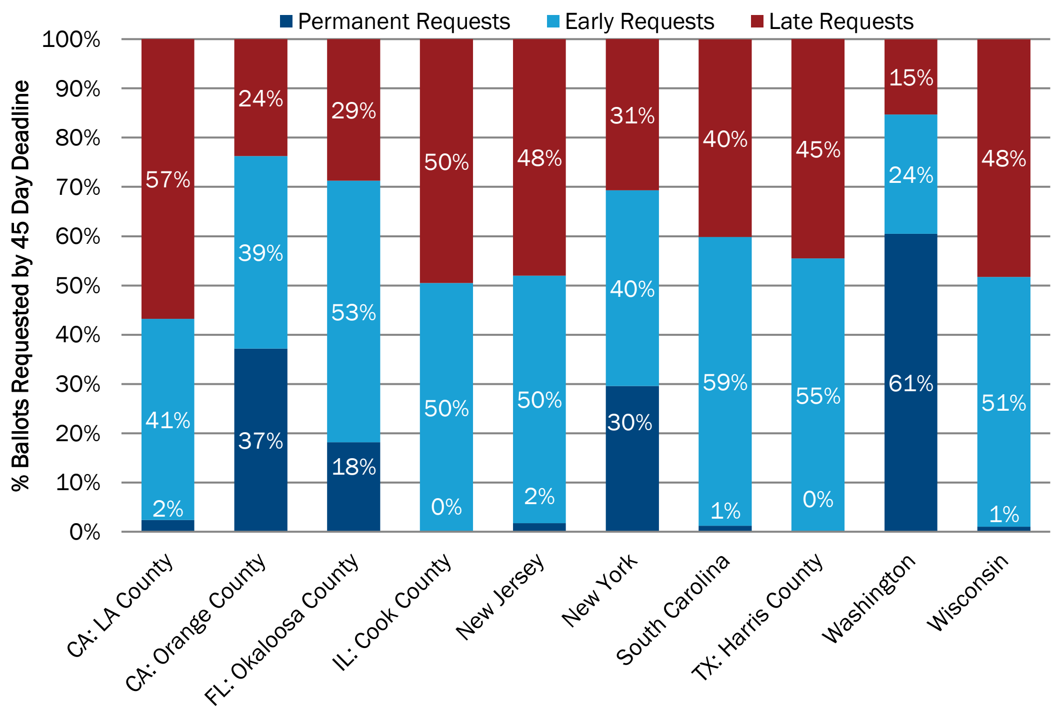
Figure 3: *UOCAVA* Ballot Request Date for the 2016 General Election, by 45-Day Deadline



Note: *N* = 212,817, limited to cases with a valid application received date. A total of 69,375 ballot requests were received before January 1, 2016, and were bottom-coded as January 1, 2016.

Across all localities, 69% of ballot requests were received by September 24, 2016. Excluding Washington, 60% of all ballot requests were received by the transmission deadline. Most localities received a similar proportion of ballots before the 45-day deadline. Figure 4 shows the percentage of ballot requests received before the 45-day deadline for participating localities with valid data. Washington, with the highest number of ballot requests, received 85% of its ballot requests at least 45 days before the election and, therefore, slightly biased the overall average upward. Of all ballot requests received, 61% of Washington's were from permanent ballot requests received before January 1, 2016. Considering how permanent ballot requesters may exhibit different behavior in regard to requesting and returning an absentee ballot, they are excluded from analysis results in the rest of this report.

Figure 4: *UOCAVA* Ballot Requests Prior to 45-Day Deadline by Participating Locality



Note: *N* = 158,831, limited to cases with a valid application received date. Table does not include data for Colorado, New York, North Carolina, Oregon, and TX: Bexar County. Permanent requests are ballots received before January 1, 2016; early requests are ballots received between January 1 and September 24, 2016; late requests are all requests received after September 24, 2016.

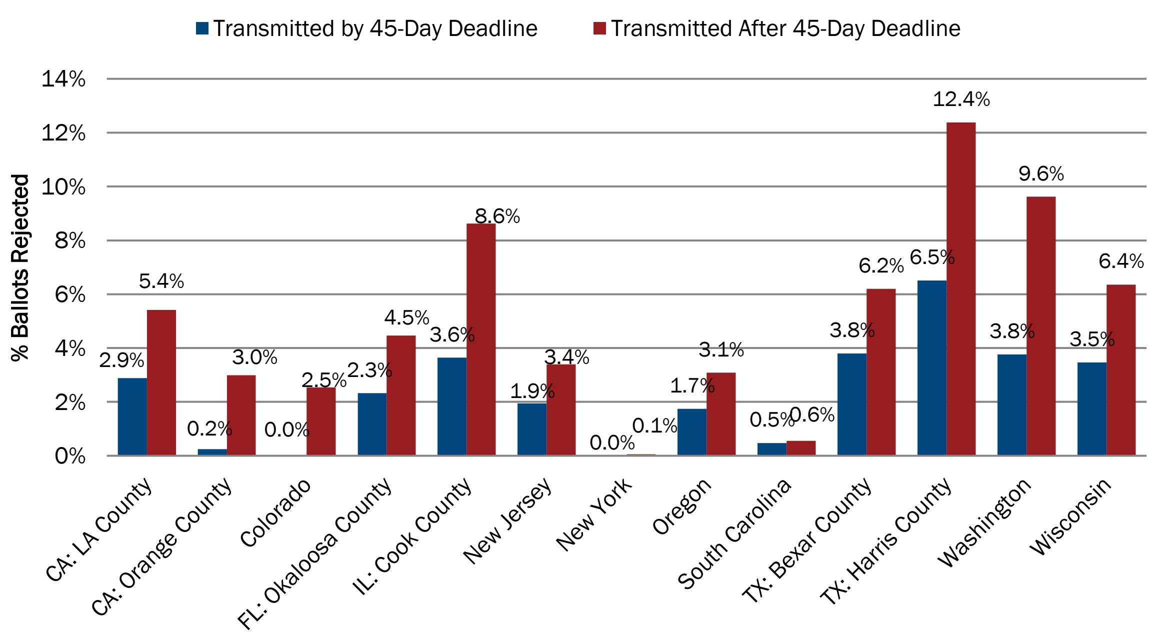
2. Ballot Transmission Timing

The following analysis sections are limited to evaluating ballot transmission mode and timing among ballot requests received in 2016. Across all participating localities, 166,503 ballot requests were received in 2016. Across all participating localities, 89,726 (54%) ballots were transmitted 45 days before the election and 77,127 (46%) ballots were transmitted less than 45 days before the election, typically due to voters requesting a ballot too close to the election. More specifically, 17% were recorded in the ESB Data Standard as transmitted between September 25 and October 9, 19% were transmitted between October 10 and October 24, and 10% were transmitted on October 25 or later.

The impact of adhering to the 45-day transmission policy is unclear when looking at only the bivariate relationship between ballot transmission timing and ballot return. Across all localities, 71% of ballots transmitted early and 69% of ballots transmitted late were returned to their jurisdiction on time. However, when excluding Washington, this gap widens where 76% of ballots transmitted early and 71% of ballots transmitted late were returned to their jurisdiction on time. If one divided the 45-day period into three equal periods, then there is a decrease in return percentage the later a ballot is transmitted, with 75% of ballots transmitted between September 25 and October 9 being returned, a 70% return rate for those transmitted from October 10 to October 24, and a 60% return rate for ballots transmitted after October 25. Overall, this *suggests* early ballot transmission was *slightly more likely* overall to lead to ballot returns compared to late transmission, but this may depend on factors unique to each locality. In nearly all localities, transmitting a ballot at least 30 days before the general election tended to be associated with a higher percentage of ballots returned on time.

Across all localities and among only returned ballots, ballots transmitted 45 days before the election had a 2.2% rejection rate compared to a 4.4% rejection rate for ballots transmitted late. Figure 5 presents the percentage of ballots rejected in each locality based on whether a ballot was transmitted by the 45-day transmission deadline or after. In all localities, the rejection rate was higher for ballots transmitted late. For example, in Wisconsin, ballots transmitted early had a 3.5% rejection rate compared to a 6.4% rejection rate for ballots transmitted late.

Figure 5: 45-Day Transmission and Ballot Rejection by Participating Locality

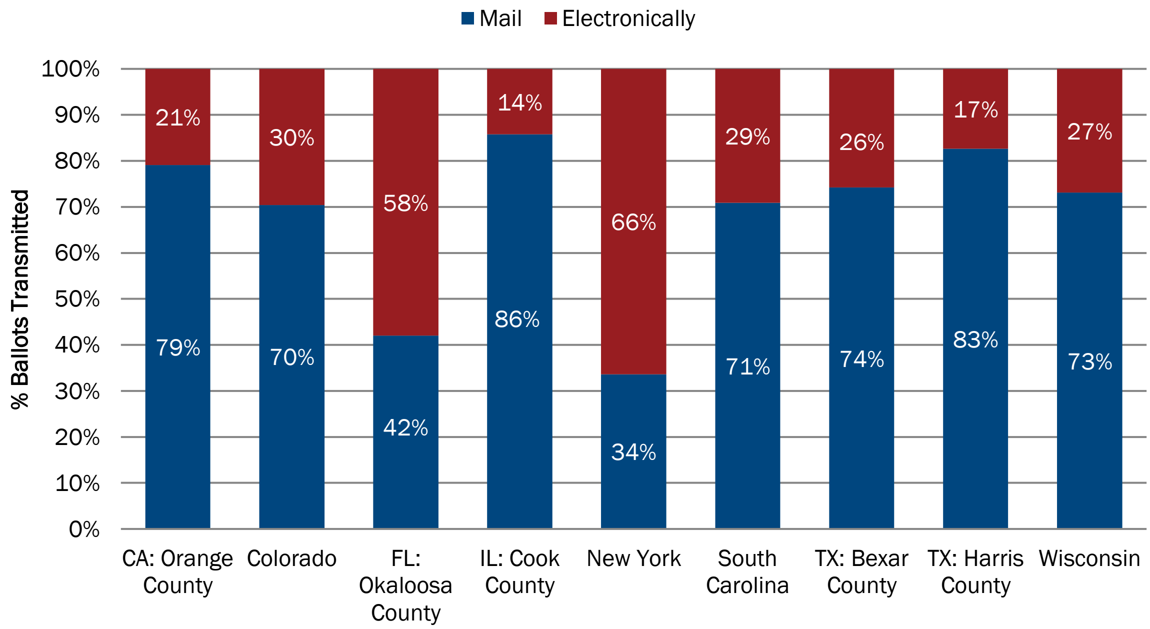


Note: *N* = 119,904, limited to *UOCAVA* ballot requesters who requested a ballot in 2016, returned their ballots to jurisdictions, and had cases with non-missing data. Rejection includes rejected and late returned ballots. Missing data for North Carolina.

3. Ballot Transmission Mode

Ballot transmission mode is a key factor in determining timely ballot return. Across all localities, 60% of ballot transactions were transmitted by mail versus 40% transmitted electronically through email, online, or other methods. Excluding Washington, 47% of ballots were transmitted by mail and 53% electronically. Figure 6 displays the percentage of ballots transmitted by mail and electronically for each locality, limited to all individuals who requested a ballot in 2016.[24] Okaloosa County, FL, and New York were both more likely to transmit ballots electronically than by mail. In contrast, all other counties transmitted between 70% and 86% of their blank ballots via mail.

Figure 6: Transmission Mode by Participating Locality



Note: *N* = 133,700, limited to *UOCAVA* ballot requesters who requested a ballot in 2016 and cases with non-missing data. Missing data for CA: LA County, New Jersey, North Carolina, Oregon, and Washington.

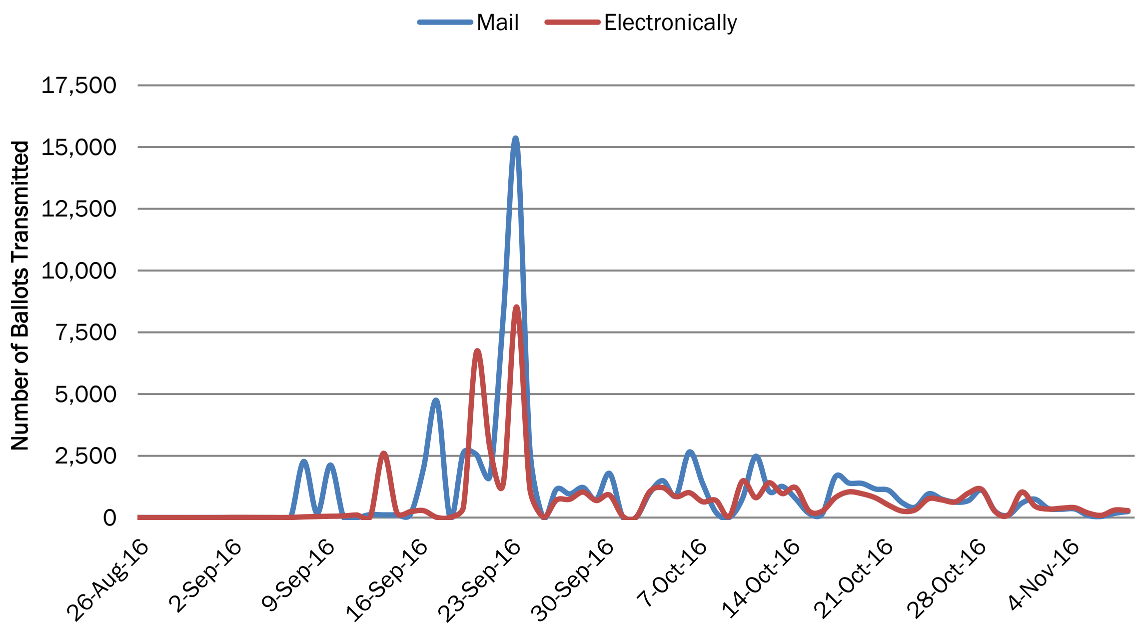
The date that ballots are transmitted to *UOCAVA* voters varies by the mode of transmission. For both mail and electronic modes, the volume of transmissions peaked 45 days before the election; however, these were not the only high-volume transmission dates. As displayed in Figure 7, the five highest volume days overall for mail ballot transmissions were (1) September 23, (2) September 22, (3) September 17, (4) September 24, and (5) October 6. The five highest volume days overall for email ballot transmissions were (1) September 23, (2) September 20, (3) September 21, (4) September 13, and (5) October 12. From 45 days out until Election Day, there was roughly the same volume and timing of ballots being transmitted by email and mail.[25] The average time

[24] More research is needed to identify why some localities contain only one transmission mode in the ESB Data Standard. This may relate to duplicate ballot transmissions by both mail and email, in which only one mode is recorded in the localities' database.

[25] Ballots that are requested after the 45-day deadline are typically transmitted on a rolling basis depending on state regulations for

between request and transmission for ballots transmitted after the 45-day deadline was 2.6 days, suggesting an immediate turnaround after processing. Overall, Figure 7 shows mail ballots may be transmitted by some localities earlier to compensate for mailing duration times, but that typically mail and electronic ballots are transmitted concurrently.

Figure 7: Ballot Transmission Date by Ballot Transmission Mode



Note: *N* = 133,700, limited to *UOCAVA* ballot requesters who requested a ballot in 2016 and cases with non-missing data.

Across all localities, 68% of ballots transmitted by mail were returned to their jurisdiction compared to 71% of ballots transmitted electronically. When excluding Washington and LA County, CA, 81% of ballots transmitted by mail were returned compared to 71% of ballots transmitted electronically. Figure 8 presents the percentage of ballots returned on time by locality based on whether a ballot was transmitted by mail or electronically. All but one locality with multiple transmission modes had a higher on-time ballot return rate for ballots transmitted by mail, whereas South Carolina had a higher on-time return rate for ballots transmitted electronically. This suggests that mail mode is slightly more likely to lead to

late ballot requests. In the rare event that the ESB Data Standard shows a ballot was received by the 45-day deadline, but transmitted after this date, the most likely explanations are:

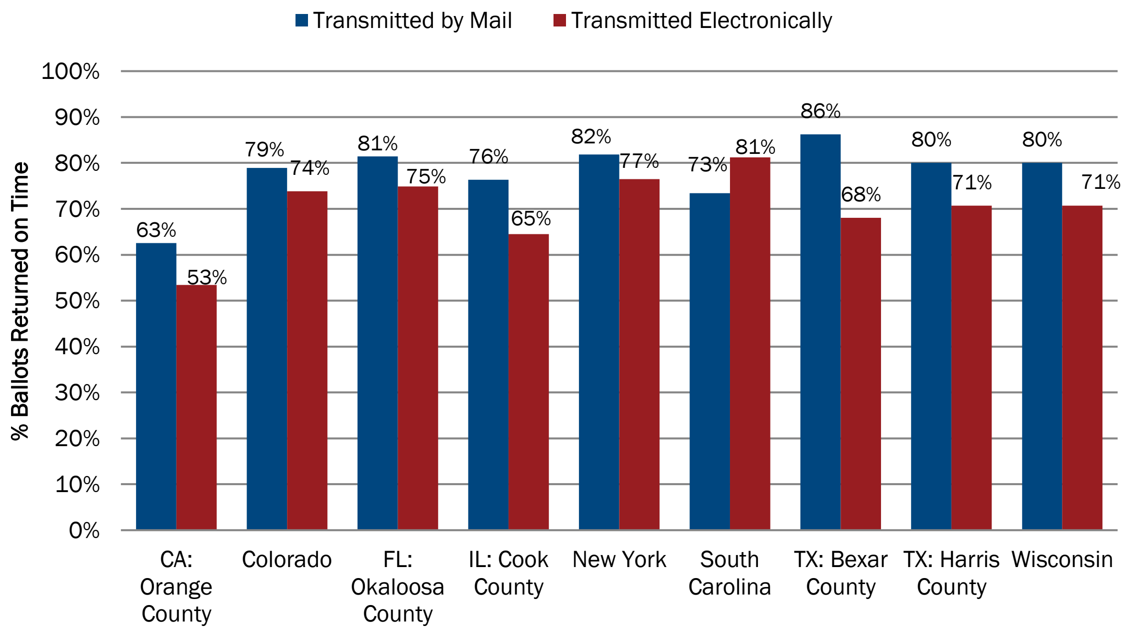
Online Registration/Transmission—When voters register and/or have a ballot transmitted to them online, their ballot request received date and ballot transmission dates may be altered. For example, in one locality, voters accessing their blank ballot after the 45-day deadline would have their transmission date recorded on the day they accessed a ballot.

UOCAVA Address Change—If voters became *UOCAVA* after the 45-day deadline, they would be transmitted a ballot shortly after their address change. If a locality does not have an indicator of when a voter became *UOCAVA*, it may appear that the voter was sufficiently registered before the 45-day deadline but did not receive a ballot transmission on time.

Postmark/Registration Date—Some localities do not collect both a postmark and a ballot request received date. Their system overrides the registration date with the postmark date if the latter is earlier. The backdating may cause a ballot to appear as if it were received by the locality earlier than it actually arrived.

ballot returns, but that again these results are very sensitive to multivariate effects not controlled for in descriptive analyses.

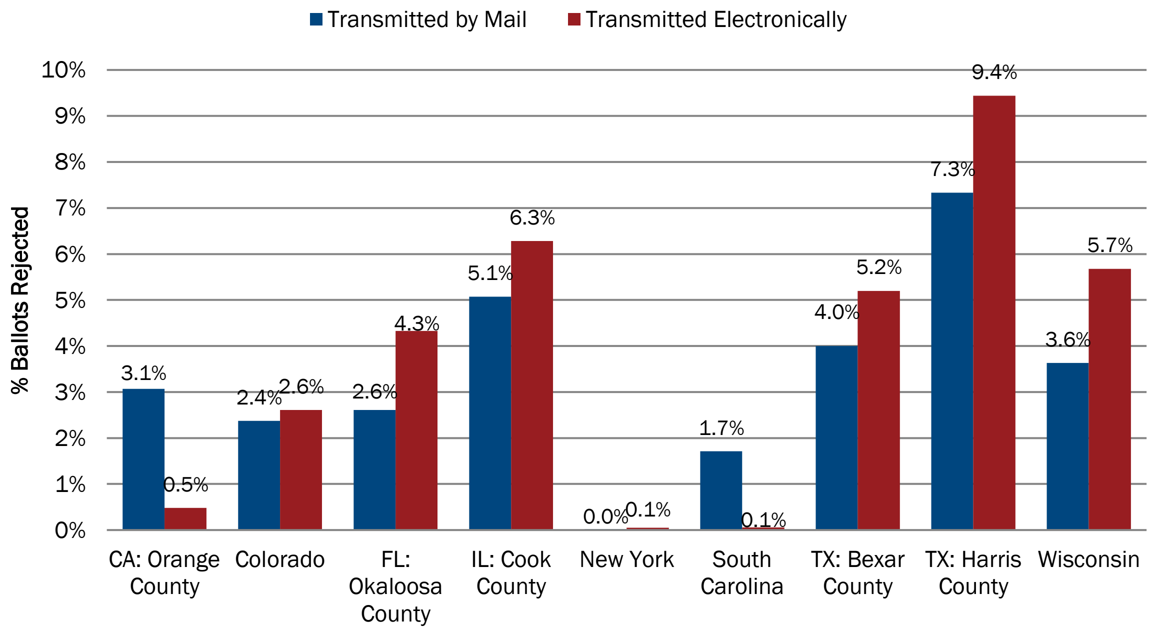
Figure 8: Transmission Mode and Ballot Return by Participating Locality



Note: *N* = 133,700, limited to *UOCAVA* ballot requesters who requested a ballot in 2016 and cases with non-missing data. Missing data for CA: LA County, New Jersey, North Carolina, Oregon, TX: Bexar County, and Washington.

The association between transmission mode and ballot rejection suggests a small positive effect by mail, which is skewed by states reporting data via only one transmission mode. Across all localities and among returned ballots, ballots transmitted by mail had a 3.2% rejection rate compared to a 3.7% rejection rate for electronically transmitted ballots. Excluding Washington and LA County, CA, ballots transmitted by mail had a 1.4% rejection rate compared to a 3.7% rejection rate for electronically transmitted ballots. Figure 9 displays the percentage of ballots rejected by ballot transmission mode for each participating locality. Six localities had rejection rates that were one to two percentage points higher for ballots transmitted electronically than by mail. Most localities did not vary more than a couple of percentage points on their rejection rates between mail and electronic transmission modes, suggesting a mode's effect on rejection rates, if any, is small.

Figure 9: Transmission Mode and Ballot Rejection by Participating Locality



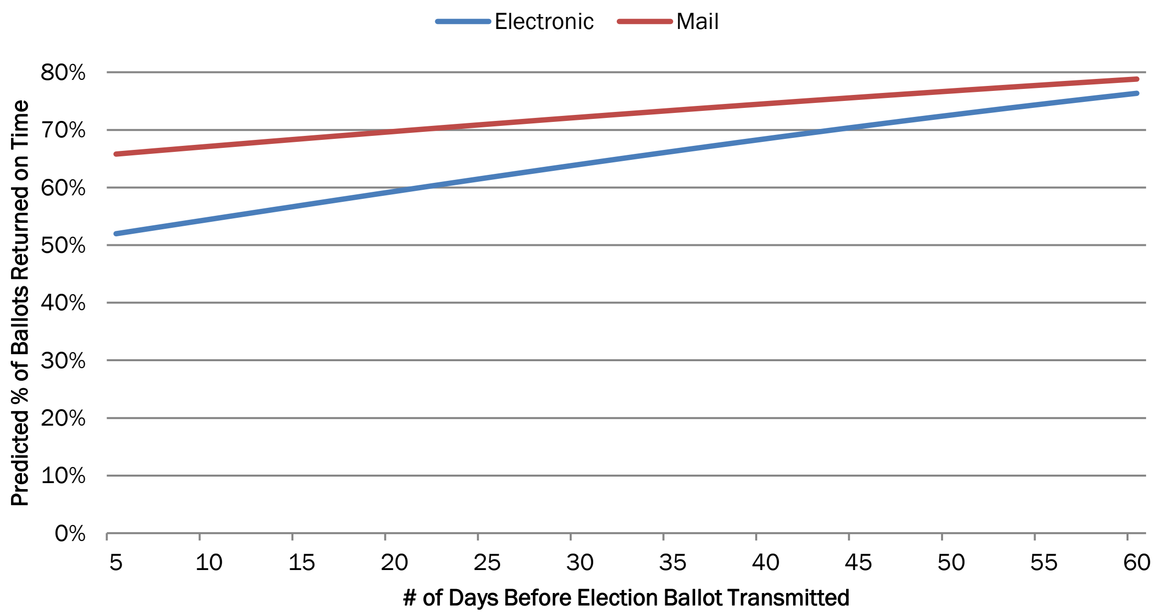
Note: *N* = 94,372, limited to *UOCAVA* ballot requesters who requested a ballot in 2016, returned their ballots to jurisdictions, and had cases with non-missing data. Rejection includes rejected and late returned ballots. Missing data for CA: LA County, New Jersey, North Carolina, Oregon, and Washington.

4. The Impact of Ballot Transmission Timing and Mode

The previous analyses have explored the descriptive differences of ballot transmission timing and mode on ballot return and rejection. They have shown descriptively that early ballot transmission and mail transmission tend to be associated with both higher return rates and lower rejection rates. However, these effects vary across localities and do not formally test the effect of transmission timing or mode on each outcome. This demonstrates the need to go beyond descriptive differences in analyzing the multivariate effects impacting ballot return and rejection.

Figure 10 shows the combined effect of ballot transmission timing and ballot transmission mode on the likelihood of on-time ballot return based on the model in Table B1 (Appendix B). For every one day earlier a ballot was transmitted, the likelihood of ballot return increased by 0.3 percentage points, when controlling for all other factors. A ballot transmitted 15 days before the election had a 68% likelihood of return when transmitted by mail and 57% likelihood when transmitted electronically. In contrast, a ballot transmitted 45 days before the election had a 76% likelihood of return when transmitted by mail and 71% likelihood when transmitted electronically. The effect of transmission timing was positive, but not statistically significant, whereas the effect of transmission mode mail was statistically significant and positive. These models isolate the effect of early transmission timing by excluding permanent absentee ballot requesters who requested before January 1, 2016. They also control for the duration between ballot request receipt and the election, which can be interpreted as an individual making an early ballot request.

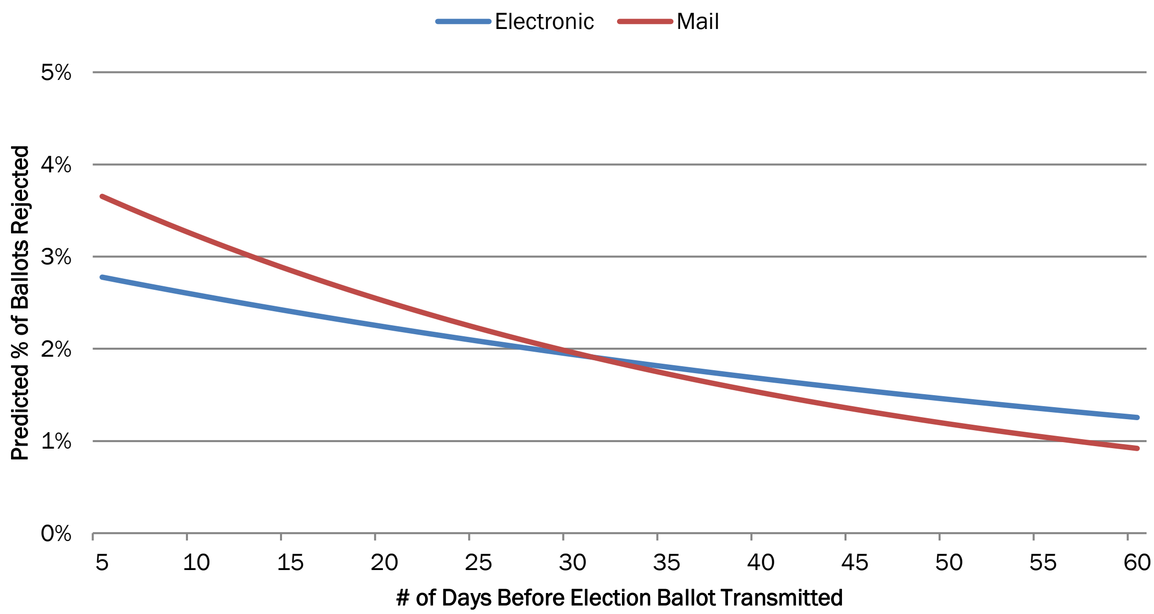
Figure 10: Likelihood of Ballot Return on Time by Ballot Transmission Timing and Mode



Note: The percentages are the predicted probabilities from the model in Appendix B, Table B1 (Model 3) of the likelihood of ballot return on time, with all control variables held at their means so that the demographics of the sample more closely match those of the population.

Figure 11 shows the combined effect of transmission timing and mode on the likelihood of ballot rejection, conditional on a ballot returned on time, based on a model in Table B2 (Appendix B). These rejection percentages can be interpreted as rejections for reasons other than lateness, such as eligibility or other factors, in contrast to rejections due to lateness. The results show that the likelihood of rejection increases when transmitting ballots later, but that this is primarily associated with mail transmission. For every one day earlier a ballot was transmitted, the likelihood a ballot was rejected decreased by 0.06 percentage points. A ballot transmitted 15 days before the election had a 2.85% likelihood of rejection when transmitted by mail and 2.41% likelihood when transmitted electronically. In contrast, a ballot transmitted 45 days before the election had a 1.34% likelihood of rejection when transmitted by mail and 1.56% likelihood when transmitted electronically. The effect of transmission timing on rejection was statistically significant and negative, whereas the effect of transmission mode and the interaction between timing and mode did not exhibit statistically significant differences. Additionally, ballots requested through a state ballot request were significantly more likely to be rejected than ballots requested using an FPCA. This is consistent with the FPCA ensuring a voter will more accurately complete the necessary blocks of information needed to vote. Early ballot requesters were significantly less likely to have their ballots rejected, consistent with experience leading to lower levels of rejection.

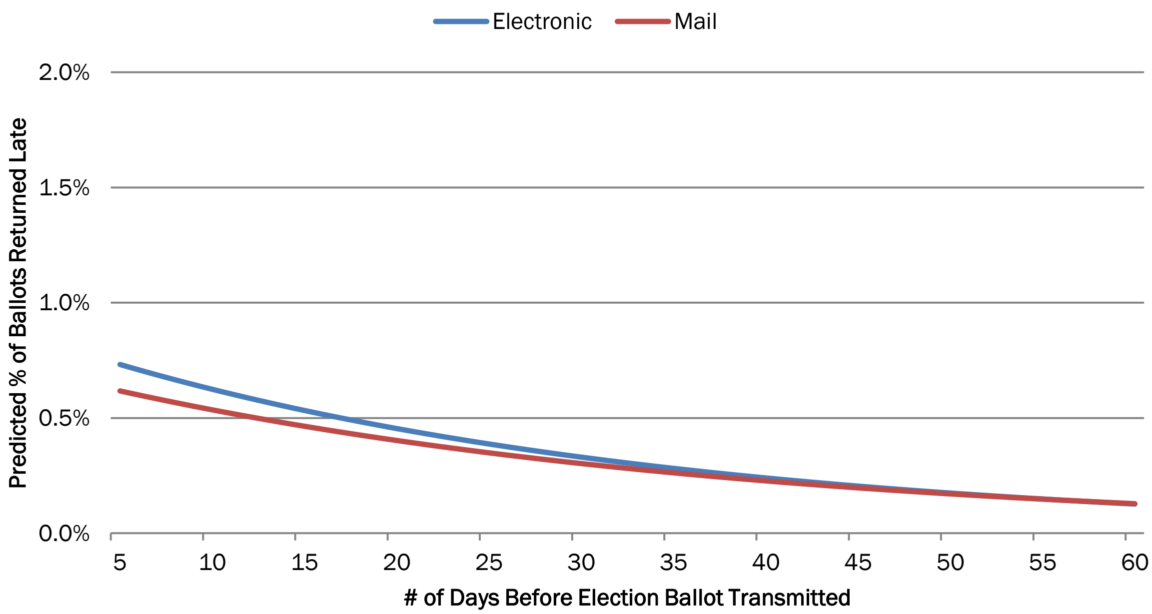
Figure 11: Likelihood of Ballot Rejection by Ballot Transmission Timing and Mode



Note: The percentages are the predicted probabilities from the model in Appendix B, Table B2 (Model 3) of the likelihood of ballot rejection, conditional on return, with all control variables held at their means so that the demographics of the sample more closely match those of the population.

Figure 12 shows the combined effect of transmission timing and mode on the likelihood of late ballot return, conditional on a ballot returned, based on a model in Table B3 (Appendix B). These percentages can be interpreted as rejections due to lateness. The results show that the likelihood of late return slightly decreases when transmitting ballots earlier regardless of transmission mode. For every one day earlier a ballot was transmitted, the likelihood a ballot was returned late decreased by 0.05 percentage points. A ballot transmitted 15 days before the election had a 0.46% likelihood of rejection due to lateness when transmitted by mail and 0.53% likelihood when transmitted electronically. In contrast, a ballot transmitted 45 days before the election had a 0.20% likelihood of rejection due to lateness when transmitted by mail and 0.20% likelihood when transmitted electronically. The effect of transmission timing on late ballot return was statistically significant and negative, whereas the effect of transmission mode and the interaction between timing and mode did not exhibit statistically significant differences. Early requesters did not have a significantly different likelihood of returning a ballot late. Overall, localities recorded a small number of late ballots returned and it is unclear how consistent these records are across each election office. These results, however, are consistent with early ballot transmission being associated with lower levels of late ballot returns.

Figure 12: Likelihood of Ballot Returned Late by Ballot Transmission Timing and Mode



Note: The percentages are the predicted probabilities from the model in Appendix B, Table B3 (Model 3) of the likelihood of late ballot return, with all control variables held at their means so that the demographics of the sample more closely match those of the population.

5. The Impact of the Ballot Transmission Timing and Mode by UOCAVA Type

Analyses presented above combined both types of *UOCAVA* voters: ADM and overseas citizens. Past FVAP research has shown that ADM and overseas citizens have different demographic, geographic, and motivational factors that impact their likelihood to vote and make their voting behavior difficult to compare.[26] FVAP has also shown that for the 2016 General Election in particular, ADM were less likely to vote compared to the civilian voting age population (CVAP) due to differences such as geography and demographics.[27]

Figures 13 and 14 present the findings of models of the likelihood of returning a ballot on time, isolated to individual models of ADM and overseas citizens (Table B1, Appendix B). ADM were significantly more likely to return a ballot when they received it by mail versus electronically, whereas the likelihood of return was not significantly different based on transmission time. For every one day earlier a ballot was transmitted, the likelihood of ballot return increased for ADM by 0.009 percentage points, when controlling for all other factors. A ballot transmitted 15 days before the election had a 62% likelihood of return when transmitted by mail and a 49% likelihood when transmitted electronically. In contrast, a ballot transmitted 45 days before the election had a 65% likelihood of return when transmitted by mail and 53% likelihood when transmitted electronically. The effect of transmission timing and the interaction between timing and mode did not exhibit

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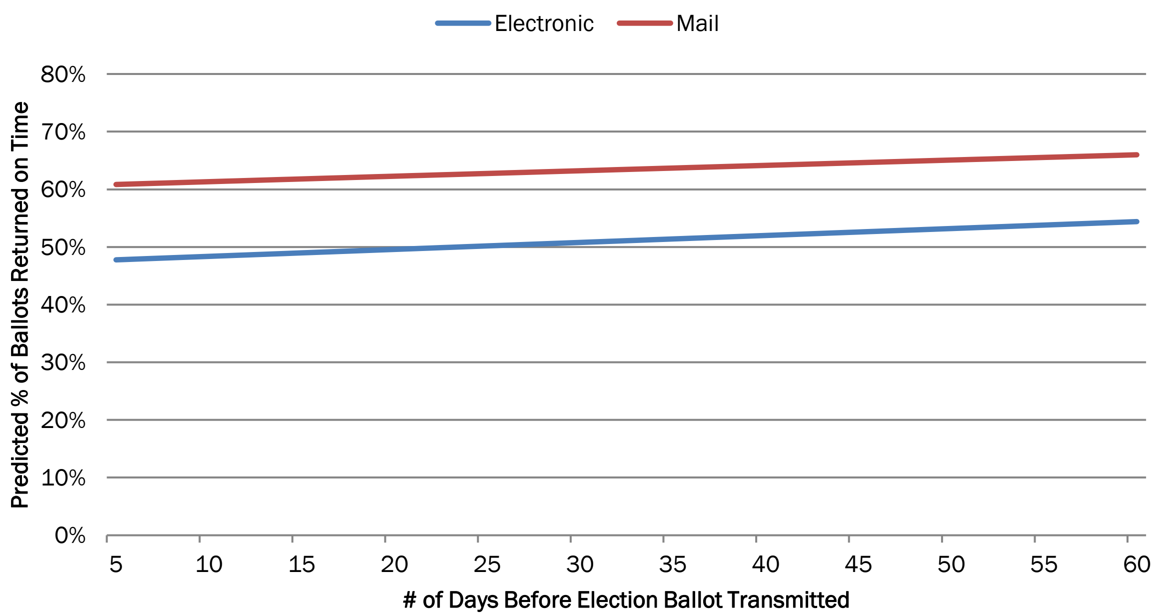
[26] FVAP. (2017). Measuring Obstacles to Voting for UOCAVA ADM: Introducing the UOCAVA Gap. Available at https://www.fvap.gov/uploads/FVAP/Reports/UOCAVAGapResearchNote_20171204_final.pdf

[27] See 2016 PEVS-ADM Technical Report, available at https://www.fvap.gov/uploads/FVAP/Reports/PEVS_ADM_TechReport_Final.pdf

statistically significant differences, whereas the effect of transmission mode by mail was positive and statistically significant.

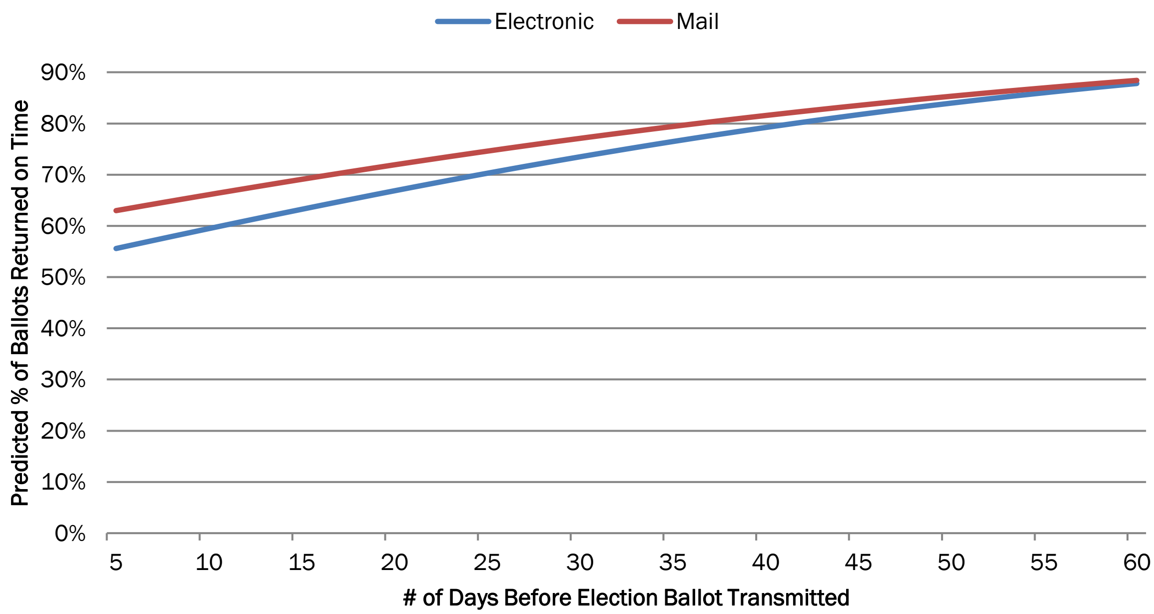
Overseas citizens overall had a higher likelihood of returning a ballot on time than ADM, consistent with prior research. As displayed in Figure 14, overseas citizens were more likely to return a ballot when they received it early and by mail. For every one day earlier a ballot was transmitted, the likelihood of ballot return increased for overseas citizens by 0.05 percentage points, when controlling for all other factors. A ballot transmitted 15 days before the election had a 69% likelihood of return when transmitted by mail and 63% likelihood when transmitted electronically. In contrast, a ballot transmitted 45 days before the election had an 84% likelihood of return when transmitted by mail and 82% likelihood when transmitted electronically. The effect of transmission timing was statistically significant and positive, whereas the effect of mode was not significantly different from zero.

Figure 13: Likelihood of Ballot Return on Time among ADM



Note: The percentages are the predicted probabilities from the model in Appendix B, Table B1 (Model 4) of the likelihood of ballot return on time for ADM only, with all control variables held at their means so that the demographics of the sample more closely match those of the population.

Figure 14: Likelihood of Ballot Return on Time among Overseas Citizens



Note: The percentages are the predicted probabilities from the model in Appendix B, Table B1 (Model 5) of the likelihood of ballot return on time for overseas citizens only, with all control variables held at their means so that the demographics of the sample more closely match those of the population.

Discussion and Conclusion

This research note revealed a number of key findings:

- The date of ballot request was highly dispersed over time: 69% of ballot requests were received at least 45 days before the election; 13% of all ballot requests were received from September 25 to October 9, 2016; 13% were received from October 10 to October 24; and 4% were received on October 25 or later.
- Overall, 68% of ballots transmitted by mail were returned to their jurisdiction compared to 71% of ballots transmitted electronically.
- A ballot transmitted 15 days before the election had a 62% likelihood of return when transmitted by mail and a 49% likelihood when transmitted electronically. A ballot transmitted 45 days before the election had a 65% likelihood of return when transmitted by mail and 53% likelihood when transmitted electronically.
- Early ballot transmission was positively associated with higher ballot return, but not significantly, whereas mail transmission mode was significantly associated with higher ballot return than electronic transmission, after controlling for all other factors.
- A ballot transmitted 15 days before the election had a 2.85% likelihood of rejection when transmitted by mail and 2.41% likelihood when transmitted electronically. In contrast, a ballot transmitted 45 days before the election had a 1.34% likelihood of rejection when transmitted by mail and 1.56% likelihood when transmitted electronically.
- Transmitting a ballot early was significantly associated with lower rejection levels due to accuracy and

lower rejection levels due to lateness for all populations, regardless of mode.

The findings here serve as points of validation for *the MOVE Act* reforms related to ballot transmission. Consistent with *the MOVE Act* reforms expressing that all ballot requests received at least 45 days before the general election should be transmitted by then, this research shows that there is a positive impact of early transmission on increasing ballot return and decreasing ballot rejection.

The detailed and enticing findings presented here display the powerful potential of the ESB Data Standard in collecting and analyzing individual-level data on *UOCAVA*-related questions, as well as improving FVAP's customer service to key stakeholder populations. This research marks the successful completion of the 2016 goals for the ESB Data Standard, namely understanding the breadth of the data that jurisdictions already collect, standardizing 14 different data sets to a *UOCAVA* data standard, and analyzing one specific *UOCAVA* research topic. These results show prominently that adoption of the ESB Data Standard can lead to not only less burden on election officials, but also more in-depth analyses that are useful for all stakeholders interested in improving the absentee voting process.

This research note hypothesized that (1) early ballot transmission should be associated with higher levels of ballot return and lower levels of ballot rejection based on increased voting time; and that (2) electronic transmission mode should be associated with higher levels of ballot return and lower rejection, based on increased voting time. Overall, this research suggests that there is an insignificant but higher likelihood of returning a ballot on time, significantly lower likelihood of ballot rejection, and significantly lower likelihood of late ballot return when a ballot is transmitted early. It suggests that mail transmission has a significant impact on increasing ballot return, but that it tends to me more helpful for ADM rather than overseas citizens. These results are consistent with other FVAP research and with Pew Center on the States' analyses.[28] In 2016, FVAP administered a pilot project in which overseas military ballots were tracked in coordination with election officials and the CSG. Results from this study estimated that overseas ADM voters take a median of 28 days to complete the absentee ballot process, including a median of 14 days between the time they receive and return their absentee ballot. This research, along with the ESB Data Standard analyses presented here, suggest that *the MOVE Act* reforms are necessary to provide *UOCAVA* with a sufficient amount of time to receive and return their ballot.

This research further suggests that these overall results vary based on *UOCAVA* type. One explanation may be because ADM and overseas citizen mail modes are very different. ADM *UOCAVA* use (1) the Military Postal Service Agency (MPSA) for requesting and returning their absentee ballot, (2) benefit from expedited absentee ballot return services pursuant to *UOCAVA*, and (3) have access to installation voting resources. Overseas citizens use the U.S. Postal Service for transmitting and receiving mail while relying on their overseas countries' mailing system when casting their ballot. This can lead to lower return rates, as one FVAP research note revealed overseas citizens in countries with the most reliable postal systems are 65% more likely to have a vote recorded

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[28] Pew Center on the States. (2009). No Time to Vote: Challenges Facing America's Overseas Military Voters. Available at http://www.pewtrusts.org/~/media/legacy/uploadedfiles/wwwpewtrustsorg/reports/election_reform/ nttvreportwebpdf.pdf

compared to those in countries with the lowest observed levels of postal reliability.[29] These different mail systems may either cause overseas citizens to need an earlier ballot transmission time or better facilitate ADM speedy mail returns.

Additionally, ADM and overseas citizens likely interact with electronically transmitted ballots differently. Findings from the Overseas Citizen Population Survey (OCPS) show that nearly all overseas citizens have access to internet, laptops, and smartphones.[30] FVAP's long-standing work on ADM installations has revealed that some ADM may experience network latency issues with the internet, particularly if they are deployed or on a ship. This difference could explain why electronically transmitted ballots are less likely to be returned by ADM than mailed ballots. Alternatively, this may indicate an issue with the usability of blank ballots that are distributed electronically.

Consistent with the stated hypothesis, early ballot transmission was significantly associated with lower levels of ballot rejection. Localities vary in how they record rejected ballots, so it is difficult to say what the primary reasons were for rejections using this small sample. The implicit theory behind the 45-day policy is that early transmitted ballots should lead to lower levels of late returned ballots. Using the ESB Data Standard data, there was a small but significant increase in late returned ballots for late transmitted ballots, regardless of mode. This could be underestimated if jurisdictions do not record all late returned ballots after a certain date. It is also certainly biased by the fact that some *UOCAVA* ballot requesters will not vote if they receive their transmitted ballot in a timeframe they believe to be too late.

Recommendations

This effort is a substantial first step to leveraging the improved data quality contained in the ESB Data Standard to measure *UOCAVA*-related questions such as the impact of transmission timing and mode on the absentee voting process. FVAP plans to expand on the success of the 2016 ESB Data Standard by encouraging greater jurisdiction participation, continually refining the standard with election official feedback, and planning future analyses that can benefit the *UOCAVA* population and the stakeholders that serve them. FVAP can expand the adoption of this ESB Data Standard by applying lessons learned from the 2016 data collection and analysis, along with valuable feedback from election officials.

Limitations

Although the data analyzed here comprise approximately one-fourth of the *UOCAVA* ballot requester population, these localities are neither a census nor a representative sample of the *UOCAVA* population. As such, the results are not intended to be extrapolated to all *UOCAVA*. Additionally, the regression analyses are highly censored, due to excluding missing data. Although the regressions use fixed effects for localities, the results may be biased by the variance in state policies that influence the likelihood of ballot return or rejection. Other state and jurisdiction database topics

[29] FVAP. (2016). International Mailing Systems and Voting by Overseas Citizens. Available at https://www.fvap.gov/uploads/FVAP/Reports/ResearchNoteInternationalMail_20161128_final.pdf

[30] FVAP. (2016). Overseas Citizen Population Analysis. Available at https://www.fvap.gov/uploads/FVAP/Reports/FVAP-OCPA_201609_final.pdf

need additional research, such as how to handle online ballot transmission dates, voters who change *UOCAVA* status, the storage of postmark dates, permanent ballot requesters, and voters with multiple ballot transactions. Additionally, these analyses do not control for country effects or installation effects that have been shown to impact *UOCAVA* voters, such as the quality of overseas mailing or the impact of direct installation voting assistance. The ESB Data Standard was also not intended to capture certain demographic factors. Nevertheless, FVAP has made a substantial leap in the ESB Data Standard in standardizing *UOCAVA* data and executing analyses that drastically advance the ability to understand the absentee ballot process.

References

Alvarez, R. Michael, Thad E. Hall, and Brian F. Roberts. (2007). Military voting and the law: Procedural and technological solutions to the ballot transit problem. *Fordham Urban Law Journal*. *34*: 935–996.

Alvarez, R. Michael, Thad E. Hall, and Betsy Sinclair. (2008). Whose absentee votes are returned and counted: The variety and use of absentee ballots in California. *Electoral Studies*. *27*, 4: 673–683.

Federal Voting Assistance Program. (2015). Registration and voting participation differences between the active duty military and citizen voting age populations in the 2014 election. Available at https://www.fvap.gov/uploads/FVAP/Reports/2015_FVAP_ResearchNote6_Final_1027.pdf

Federal Voting Assistance Program. (2016). Overseas citizen population analysis. Available at https://www.fvap.gov/uploads/FVAP/Reports/FVAP-OCPA_201609_final.pdf

Federal Voting Assistance Program. (2016). FVAP resource use and experience among overseas citizens in the 2014 election. Available at https://www.fvap.gov/uploads/FVAP/Reports/ResourceUseResearchNote_20161031.pdf

Federal Voting Assistance Program. (2016). International mailing systems and voting by overseas citizens. Available at https://www.fvap.gov/uploads/FVAP/Reports/ResearchNoteInternationalMail_20161128_final.pdf

Federal Voting Assistance Program. (2016). International mailing systems and voting by overseas citizens. Available at https://www.fvap.gov/uploads/FVAP/Reports/SocialConnectivityResearchNote_20161025.pdf

Federal Voting Assistance Program. (2017). 2016 PEVS-ADM Technical Report. Available at https://www.fvap.gov/uploads/FVAP/Reports/PEVS_ADM_TechReport_Final.pdf

Federal Voting Assistance Program. (2017). 2016 PEVS-VAO Technical Report. Available at https://www.fvap.gov/uploads/FVAP/Reports/PEVS_VAO_TechReport_Final.pdf

Federal Voting Assistance Program. (2017). 2016 PEVS-SEO Technical Report. Available at https://www.fvap.gov/uploads/FVAP/Reports/PEVS_SEO_TechReport_Final.pdf

Federal Voting Assistance Program. (2017). Measuring obstacles to voting for UOCAVA ADM: Introducing the UOCAVA gap. Available at https://www.fvap.gov/uploads/FVAP/Reports/UOCAVAGapResearchNote_20171204_final.pdf

Nash-Hahn, Ashley. (2016). GSA Launches Data Federation as Part of Open Government Efforts. GSA.gov. Available at https://www.gsa.gov/node/83377

Pew Center on the States. (2009). No time to vote: Challenges facing America's overseas military voters. Available at http://www.pewtrusts.org/~/media/legacy/uploadedfiles/wwwpewtrustsorg/reports/election_reform/nttvreportwebpdf.pdf

USASpending.gov. (2019) The USAspending Application Programming Interface (API). Available at https://api.usaspending.gov/

U.S. Election Assistance Commission. (2016). The election administration and voting survey: 2016 comprehensive report. Retrieved from https://www.eac.gov/assets/1/6/2016_EAVS_Comprehensive_Report.pdf

Weinberg, Darin (2007). Standardization. The Blackwell Encyclopedia of Sociology.

Appendix A: Variable Definitions

Table A1: Variable Definitions

Variable	Description
Ballot Returned	1 for an individual who has a record from his or her state or local election office that the ballot arrived at the office before the latest state absentee voting deadline, 0 for not returned
Ballot Rejected	1 for an individual who has a record from his or her state or local election office that the ballot was rejected for any reason, 0 for returned and not rejected
Ballot Returned Late	1 for an individual who has a record from his or her state or local election office that the ballot was rejected due to lateness OR returned the ballot after the latest state absentee voting deadline, 0 for returned on time
Ballot Transmission Date	Date ballot transmitted as recorded by the state or local election office
Ballot Transmitted Early/Late	1 for ballot transmitted early, meaning ballot transmitted on or before September 24, 2016, 0 for ballot transmitted late, meaning ballot transmitted after September 24, 2016
Ballot Transmission Timing	Number of days from ballot transmission date to Election Day, as recorded by the state or local election office
Ballot Transmission Mode	1 for ballot transmitted by mail, 0 for ballot transmitted electronically, including email, fax, online, or other
Ballot Request Type	1 for FPCA ballot request, 2 for state ballot request, and 3 for other ballot request type
ADM *UOCAVA*	1 for ADM *UOCAVA* ballot requester, 0 for overseas citizen ballot requester
Ballot Request Timing	Number of days from ballot request receipt date to Election Day, as recorded by the state or local election office
Permanent Absentee Requester	1 for having a record of requesting a ballot before January 1, 2016, 0 for having a record of requesting a ballot after January 1, 2016
Locality	1 for CA: Orange County, 2 for Colorado, 3 for FL: Okaloosa County, 4 for IL: Cook County, 5 for New Jersey, 6 for New York, 7 for North Carolina, 8 for Oregon, 9 for South Carolina, 10 for TX: Bexar County, 11 for TX: Harris County, 12 for Washington, 13 for Wisconsin

Appendix B: Regression Tables

TABLE B1. Ballot Transmission Timing and Mode on Ballot Return

	Full Sample (Model 1)	Perm Req (Model 2)	Non-Perm Req (Model 3)	ADM (Model 4)	Overseas Citizens (Model 5)
Transmission Time	.00122	-.00997**	.00284	.000936	.00479**
	(.00186)	(.00317)	(.00162)	(.000945)	(.00171)
Transmitted Mail	.0457*	-.027	.0627***	.108***	.0286
	(.0208)	(.0205)	(.0189)	(.0294)	(.0163)
State Ballot Request	.0214	.0366***	.00635	-.0239	-.0273
	(.0186)	(.0013)	(.0295)	(.0336)	(.0426)
Other Ballot Request	.087***	.0534	.0799***	.0882***	.0528***
	(.0124)	(.0311)	(.0149)	(.0205)	(.004)
ADM *UOCAVA*	-.184***	-.204***	-.155**		
	(.0405)	(.00221)	(.0534)		
Ballot Request Timing	1.94e-06	.0000205	-.000202*	-.000148	-.000235**
	(6.72e-06)	(.0000124)	(.0000801)	(.000108)	(.0000801)
Permanent Absentee Requester	-.0821***				
	(.0202)				
Observations	185,029	65,649	119,377	53,433	65,944

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Coefficients are marginal effects that were derived from logit models. The dependent variable in Models 1–5 is a dichotomous indicator for whether a voter's ballot was recorded as returned on time by a locality. All models are limited to *UOCAVA* ballot requesters with non-missing data. Model 2 is limited to permanent ballot requesters, model 3 is limited to non-permanent ballot requesters, model 4 is limited to ADM non-permanent ballot requesters, and model 5 is limited to overseas citizen non-permanent ballot requesters. Locality-fixed effects were controlled for but not displayed. Observations are not weighted. Standard errors (in parentheses) are clustered by locality.

TABLE B2. Ballot Transmission Timing and Mode on Ballot Rejection

	Full Sample (Model 1)	Perm Req (Model 2)	Non-Perm Req (Model 3)	ADM (Model 4)	Overseas Citizens (Model 5)
Transmission Time	-.000835***		-.000647***	-.000296***	-.00103***
	(.0000616)		(.0000388)	(.0000665)	(.0000649)
Transmitted Mail	-.00272		-.00126	-.018	.0179
	(.0184)		(.0171)	(.0172)	(.0172)
State Ballot Request	.0231***		.0291***	.0154***	.0442***
	(.00211)		(.00548)	(.00464)	(.00996)
Other Ballot Request	.00271		.00351	-.00153	-.00429
	(.0105)		(.0104)	(.0107)	(.0053)
ADM *UOCAVA*	-.0103***		-.00996*		
	(.00284)		(.00405)		
Ballot Request Timing	-5.91e-06***		-.0000541*	-.0000207	-.0000953***
	(3.21e-07)		(.0000262)	(.0000233)	(.0000239)
Permanent Absentee Requester	-.00487***				
	(.00144)				
Observations	70,650	23,214	47,244	24,222	23,022

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Coefficients are marginal effects that were derived from logit models. The dependent variable in Models 1–5 is a dichotomous indicator for whether a voter's ballot was recorded as rejected by a locality due to reasons other than lateness, conditional of being returned on time by the election deadline. All models are limited to *UOCAVA* ballot requesters with non-missing data. Model 2 is limited to permanent ballot requesters, model 3 is limited to non-permanent ballot requesters, model 4 is limited to ADM non-permanent ballot requesters, and model 5 is limited to overseas citizen non-permanent ballot requesters. Locality-fixed effects were controlled for but not displayed. New York and South Carolina were censored due to lack of variation on ballot rejection. Model 2 not estimable due to lack of variation among permanent ballot requesters. Observations are not weighted. Standard errors (in parentheses) are clustered by locality.

TABLE B3. Ballot Transmission Timing and Mode on Late Ballot Return

	Full Sample (Model 1)	Perm Req (Model 2)	Non-Perm Req (Model 3)	ADM (Model 4)	Overseas Citizens (Model 5)
Transmission Time	-.000364***	.00071*	-.000512***	-.000606***	-.000505***
	(.0000635)	(.000317)	(.0000528)	(.000104)	(.0000375)
Transmitted Mail	-.00194	.00218***	-.00137	-.00452	.000127
	(.00241)	(.000652)	(.00295)	(.00463)	(.00348)
State Ballot Request	.00245	-.00257***	.00875**	.0188***	.00319
	(.00305)	(.000166)	(.00311)	(.00358)	(.00806)
Other Ballot Request	-.00385**	-.00092	-.00369***	-.003*	-.00179***
	(.00143)	(.000825)	(.000571)	(.00128)	(.000395)
ADM *UOCAVA*	-.00261	.00649***	-.00647***		
	(.00291)	(.000999)	(.00128)		
Ballot Request Timing	2.56e-06	2.34e-07	-.0000117	-.0000118	-.0000147***
	(4.42e-06)	(2.32e-07)	(9.16e-06)	(.0000235)	(4.41e-06)
Permanent Absentee Requester	.00259				
	(.00487)				
Observations	119,443	34,688	84,682	28,142	52,272

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Coefficients are marginal effects that were derived from logit models. The dependent variable in Models 1–5 is a dichotomous indicator for whether a voter's ballot was returned late. All models are limited to *UOCAVA* ballot requesters with non-missing data. Model 2 is limited to permanent ballot requesters, model 3 is limited to non-permanent ballot requesters, model 4 is limited to ADM non-permanent ballot requesters, and model 5 is limited to overseas citizen non-permanent ballot requesters. Locality-fixed effects were controlled for but not displayed. Observations are not weighted. Standard errors (in parentheses) are clustered by locality.

Appendix C: ESB Data Standard and 2016 EAVS Comparison

FVAP is interested in using future ESB Data Standard data to replace or supplement the aggregate data collected in the EAVS Section B. Below is a comparison of the transmission volume and return rates in the EAVS and ESB Data Standard for the 2016 General Election. EAVS Section B does not exclude or collapse duplicate transactions, and the data come from the same source as the ESB Data Standard, so Table C1 is a fair comparison of *UOCAVA* coverage. Table C1 shows that the ESB Data Standard collects roughly the same number of ballots transmitted for these 14 localities and similar return rates compared to the 2016 EAVS. Future research is necessary to explore why certain discrepancies exist between these two similar data sources on an aggregate and jurisdiction level.

TABLE C1. ESB Data Standard and 2016 EAV Comparison

	2016 EAVS		ESB Data Standard (Full)		ESB Data Standard (Final Valid)	
	Transmitted	% Returned	Transmitted	% Returned	Transmitted	% Returned
CA: LA County	40,232	44.61	78,839	34.46	8,830	55.89
CA: Orange County	5,384	85.10	9,619	48.13	5,436	55.56
Colorado	38,625	59.78	15,226	51.40	4,855	75.47
FL: Okaloosa County	7,894	70.78	7,448	80.67	6,012	80.66
IL: Cook County	6,029	72.91	5,949	70.14	5,948	70.02
New Jersey	18,856	N/A	18,201	79.94	17,883	80.85
New York	46,582	89.13	52,361	77.85	36,656	80.06
North Carolina	21,447	26.25	21,447	N/A	0	N/A
Oregon	16,473	N/A	19,299	70.14	15,255	72.53
South Carolina	8,618	100.00	8,618	79.47	8,354	79.36
TX: Bexar County	8,400	74.06	8,384	75.89	8,084	75.45
TX: Harris County	10,284	76.20	10,375	78.74	10,218	78.63
Washington	100,994	57.28	81,822	50.64	31,742	56.14
Wisconsin	9,259	71.01	9,451	72.76	7,580	76.73
Total	339,077	N/A	340,271	60.52	166,853	72.30

Note: ESB Data Standard data and EAVS data at the transactional level. Total limited to listed localities, although 2016 EAVS cited 930,156 total ballots transmitted. The 2016 EAVS numbers come from pg. 129 of the EAVS Comprehensive Report, *UOCAVA* Table

1: Ballots Transmitted by Voter Type. EAVS state numbers are not imputed. New Jersey and Oregon both reported 0 ballots returned in the 2016 EAVS, South Carolina reported 100% of ballots were returned. In the ESB Data Standard, CA: LA County included primary ballots that were excluded in the final valid data and all ballots were listed as returned in North Carolina. To avoid making an incompatible comparison, percentage returned here for EAVS is the percentage “received,” including those that may not have been counted. Percentage returned in the ESB Data Standard includes ballots that may have been rejected or arrived too late, which differs from the returned on-time definition used in other analyses.

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