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Improving Strategic Resource Management in the Air Force Recruiting Enterprise

Challenges and Next Steps for Policymakers

Maintaining enough trained personnel to accomplish the U.S. Air Force's missions begins with the recruiting enterprise. The Air Force resources this enterprise partly by allocating full-time recruiters and then tasking them with the mission of recruiting airmen who can meet a set of standards. These standards include the physical and mental aptitude for the Air Force's manpower needs and a strong educational background, along with other Department of Defense (DoD) medical and physical requirements for military service. In addition to staffing the recruiter force, the Air Force provides funding for national advertising, local marketing events or activities, and enlistment incentives to help recruiters be more productive and make enlisting more attractive to potential recruits. Hence, planners need a way to determine the optimal budgets for recruiters, advertising, local marketing, and incentives that will meet the enlistment target at the lowest possible cost.

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The annual mission of generating roughly 30,000 new enlistment contracts demands significant resourcing. To achieve this mission, the Air Force employs between 1,100 and 1,200 full-time enlisted recruiters, which costs approximately $100 million per year. The Air Force combines the manpower cost of putting recruiters into the field with marketing and incentives. For instance, in fiscal year (FY) 2017, the Air Force spent $60.9 million on marketing, compared with $16.1 million on enlistment bonuses (Department of the Air Force, 2018a; Department of the Air Force, 2018b).

Partly because of the scale of resources at stake, the use of marketing by the Air Force and other military services has attracted the attention of auditors and Congress in recent years. A 2016 report by the Government Accountability Office (GAO) found that DoD services could not attribute performance outcomes, such as recruiting leads, to their substantial investments in advertising and other recruiting activities (GAO, 2016). The Army's recent experience, including audit findings that prompted congressional scrutiny of its marketing budgets, sent a clear signal that Air Force planners need to be prepared to justify their recruiting resource plans based on the expected return on investment (ROI).

Abbreviations	
DoD	U.S. Department of Defense
FY	fiscal year
GAO	Government Accountability Office
IT	information technology
ROI	return on investment

Is the Air Force Positioned to Make Return on Investment–Based Resourcing Decisions?

Recent trends illustrate the challenges inherent in resource planning for recruiting. As Air Force end strength increased from 311,357 in FY 2015 to a target of 332,800 in FY 2020, budget documents indicate that budget planners

resorted to a substantial increase in the marketing budget to meet recruiting goals, as opposed to placing additional recruiters in the field or increasing the budget for enlistment incentives.[1] These resource increases likely contributed to achieving recruiting goals, but justifying the resource plans to oversight authorities requires planners to determine the optimal mix of recruiters, bonuses, and marketing activities that will meet the increased recruiting goals at the lowest cost. Ideally, planners would have access to the ROI for each resource or activity and use that to design a plan that meets this objective.[2]

Creating a resourcing plan based on ROI requires knowledge of the effect of each type of resource (*the return*) and knowledge of the resource cost (*the investment*). To compare the ROI across resource types, effects and costs must be on a common scale, which is rarely the default. For instance, the marketing field measures advertising exposure by counting *impressions*, or single instances of individuals viewing an advertisement. ROI, then, is typically provided in terms of the cost per impression. The goal of a local marketing event is to connect recruiters with potential future recruits who indicate interest in joining the Air Force, known as *leads*. If any ROI metric is available for these events, it is likely to be the cost per lead.

For recruiters, planners typically think in terms of *write rates*, or the number of signed enlistment contracts that an average recruiter can produce in a month. These examples illustrate the challenges that all of the DoD services face when overseers ask for an ROI-based justification for their resourcing decisions. They might have access to ROI metrics for only some of their key resources, and those metrics are often not directly comparable to one another.

To address these challenges, the Deputy Assistant Secretary of the Air Force for Force Management Integration asked the RAND Corporation to assess the feasibility of developing a strategic planning tool that would enable planners to choose a resource bundle that meets recruiting needs at the lowest cost. Patterned after a similar capability that RAND developed for the Army, such a tool could improve recruiting operations by ensuring that resources match the mission while also improving the ability of planners to explain and justify budgets to overseers. The feasibility of such a planning tool depends on the availability of detailed and accurate data about how the Air Force has employed recruiting resources. Our approach was to work with subject-matter experts and data owners to understand, collect, validate, and analyze the available data on historical resourcing. Then, we sought to render

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a feasibility determination based on the available data and contextual information while developing a prototype resourcing tool in the process (if possible).

We determined that the desired strategic recruiting resource planning tool is not feasible because the Air Force does not have the necessary marketing data. For example, in the case of digital and television advertising, the Air Force has access only to ROI information for intermediate outcomes, such as impressions or leads. In addition, the Air Force lacks (1) a framework for measuring the effectiveness of its activities and (2) detailed data on the cost and employment of resources.

The primary purpose of this Perspective is to help policymakers understand these challenges by providing ways to determine how different types of resources affect

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enlistments. It also addresses the specific gaps that we identified and offer recommendations for overcoming these challenges.

How Can Budget Planners Determine Whether Recruiting Resources and Activities Are Effective?

Budget planners can determine the effectiveness of recruiting resources and activities using an analytical framework employed by evaluators of social programs (Royse, Thyer, and Padgett, 2015). The foundational principle of the program evaluation framework is to create a comparison between a population exposed to the activity (a *treatment* group in experimental parlance) and a population that was not exposed to the activity (a *control* group). The behaviors and experience of the control group approximate what might have occurred in the treatment group were it not for the recruiting activity. This lets the evaluator estimate the change that the activity generated compared with what might have happened under normal conditions. The goal is to find a comparison that imitates, as closely as possible, the conditions in a randomized controlled experiment (Glennerster and Takavarasha, 2013).

Using the program evaluation framework, a user would measure a marketing activity's effectiveness by comparing the number of new leads or contracts for the recruiters participating in the activity with a baseline that approximates normal recruiting operations without the activity. Failing to account for this essential baseline is a

common mistake that will lead to an inaccurate measurement of the impact of the marketing activity.

To see how planners would operationalize this concept, consider the stylized example in Figure 1. In this example, the *activity* could be an actual recruiting event, such as an air show or a booth at a sporting event. Alternatively, the activity could be the deployment of an advertisement. The outcome on the vertical axis could be recruiting leads or enlistment contracts. The time scale could be days or hours, whichever is appropriate for the expected response to the activity. In both panels, the treatment and control areas follow a similar trend before the event, by design, because planners would intentionally select control areas based on their similarity to the treatment areas.[3] In the panel on the left, the two groups carry on with the same

trend after the activity, suggesting that the activity generated no additional productivity beyond what standard operations would produce. In the right panel, however, there is a clear spike in the treated areas relative to the control areas, and the timing of this spike corresponds to the activity, suggesting that the activity boosted productivity in the treated areas. The difference between the two lines in the right panel in the hours or days following the activity represents the effect of the activity.

The link between activities and recruiting outcomes is often more complicated than the example in Figure 1. More-complex relationships necessitate high-quality data inputs and additional modeling to measure effectiveness. For instance, measuring the effectiveness of additional recruiters in an area requires a method that accounts for

FIGURE 1

Example of Evaluation for Ineffective Versus Effective Recruiting Activities
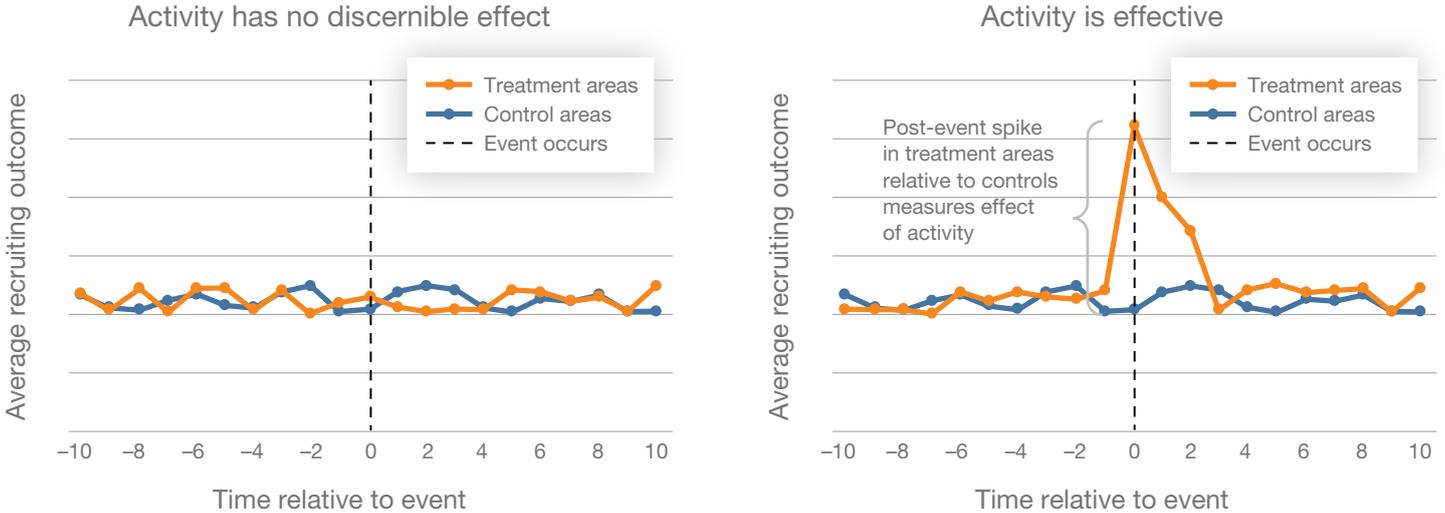
the enduring local factors that influence enlistments independent of the recruiters. Incentives, such as bonuses, tend to be increased or decreased according to whether there are recruiting challenges, making it appear in historical data as though higher bonuses correspond to fewer contracts.

National advertising does not lend itself to the sort of discrete comparison depicted in Figure 1. But studies have successfully shown advertising across various media to be effective in boosting enlistments (Dertouzos et al., 1989; Dertouzos and Garber, 2003; Knapp et al., 2018). One advantage of advertising is that the advertiser can approximate an experiment by selectively deploying resources to support an evaluation. In 1984, the DoD did just that by conducting a large-scale experiment to measure the effectiveness of its advertising (Dertouzos, 1989).

Another approach to measuring advertising effectiveness is explored in a 2018 analysis of Army recruiting resources, in which RAND researchers capitalized on the fact that exposure to national television advertisements varies by locale because youth in some areas watch more television than youth in others (Knapp et al., 2018). Thus, a national advertising push will affect youth differently depending on locale. These differences create an opportunity to approach something like the right panel of Figure 1—where the treatment area becomes a region with high levels of television viewing and the control area becomes a region where the same advertisements received lower ratings.

Advertising also differs from the example in Figure 1 in that its effects might play out in a complex way. Advertising might have delayed effects that continue to affect the audience for extended periods of time. Advertising could also require a minimum level of exposure or number of repeated exposures before it has a detectable effect (which is known as a *threshold*).

Alternatively, there is also likely to be a point at the other extreme where the audience is *saturated*, and further exposure to advertising ceases to be effective. Since the early 2000s, researchers have employed improved statistical models to capture these complex relationships between advertising and target audience behaviors (Dertouzos and Garber, 2003).

Moving Toward More-Efficient Resourcing

Once planners understand the expected effect of recruiting resources and activities on a common recruiting outcome, such as contract production or accessions, they can begin to combine this information with the cost of the activities to calculate ROI. Reliable ROI calculations enable decisionmakers to allocate resources more efficiently by shifting them toward the activities with the greatest returns. For instance, if providing $1,000 for a certain type of local recruiting event might generate five additional contracts (a cost of $200 per contract) while a $50,000 advertising purchase might generate 100 additional contracts (a cost of $500 per contract), decisionmakers could produce more than double the number of contracts by funding local events instead of purchasing advertising. In reality, as the amount of investment on a single resource increases, the ROI of additional spending on that resource tends to decrease. A model that captures this dynamic for both advertising and local events could recommend the combination of investments that achieves the goal at the lowest cost.

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At a more strategic level, a model that accurately predicts the number of contracts that an enterprise can produce from the underlying resource inputs can greatly increase understanding about whether planned resource levels will meet recruiting goals. Such a model could also determine whether it is possible to achieve the goals with a cheaper combination of resources. The Army has, over the course of several years, worked with RAND to develop such planning tools; however, the Army had to overcome several of the same barriers that prevent the Air Force from doing the same (Orvis et al., 2016; Knapp et al., 2018).

Data Collection Continues to Be a Key Challenge for the Air Force

A 2016 GAO report called particular attention to the fact that linking marketing or recruiting activities to outcomes requires granular data that the services must deliberately collect (U.S. Government Accountability Office, 2016). In general, an evaluation of resource effectiveness requires both continuous, granular information on when and where resources are deployed and equally granular information on recruiting outcomes that include each contact point of the recruiting process, from leads to accessions. Our feasibility study identified significant shortfalls in both areas.

In the area of resources, our assessment confirmed that Air Force information technology (IT) systems capture systematic data on recruiters, goals, and enlistment incentives. But, these systems lack data on local recruiting events and advertising, and there is no systematic effort to track recruiting events and associated costs so that evaluators can link them to outcomes and demonstrate effectiveness. Additionally, the Air Force does not have access to the sort of granular information on its advertising purchases that would enable high-confidence evaluation of their effectiveness. At best, the Air Force might be privy to aggregate costs of its advertising purchases and measures of how many people saw the advertisements, but this information is too general to precisely link the advertising stimulus to a response in leads or contracts. Instead, the Air Force should consider acquiring data on individual advertising

spots, with associated impressions and cost, as well as geographic variation in impressions. From this information, evaluators could begin to parse when and where advertisements have historically been present and determine whether exposure to advertisements affects leads or contract production.

As for outcomes, the capture of reliable information by Air Force IT systems begins at the contracting phase. The current systems do not reliably track leads or associate them with lead-generating activities or with subsequent contracts. This information is critical for multiple reasons. First, a lead represents the first point at which a potential recruit responds to recruiting activities, so the number of leads that activities generate and the number of leads that are later converted into contracts are key measures of performance. With no ability to determine which leads are ultimately converted into contracts and accessions, even basic statistics—such as lead-to-conversion rates for potential recruits from various sources (those that click on an online advertisement versus those who meet a recruiter at an event, for example)—are out of reach for evaluators. Furthermore, reliable lead-tracking is essential because the time required to complete the contracting process creates a gap between the resource impact and the ultimate effect on contracts. For such activities as events or advertisements, which are there one day and gone the next, it would be impossible to link the resource impulse to contracts without knowing exactly when those contracts initially became leads. In sum, even if universal data on resources were available, this outcome gap would still leave a significant part of the production process as a black box to planners seeking to measure effectiveness and determine ROI.

Recommendations

Previous audit findings, the Army's recent experience, and our own findings suggest four steps that Air Force policymakers should take to develop data-enabled decisionmaking processes that use resource allocations based on ROIs for different types of resources and activities throughout the recruiting process.

Incorporate Data Requirements for Evaluation into IT Modernization Efforts

As the Air Force modernizes its recruiting IT systems to streamline the administrative steps that recruiters must perform, efforts to create and link data should be pursued as well. If modernization efforts simply optimize the user experience under current processes without closing the aforementioned data gaps, the Air Force will not be any closer to demonstrating the impact of recruiting and marketing activities. These IT improvements should permit the collection of detailed data on resource employment and the linking of this information with reliable data on leads, contracts, and accessions. Ongoing upgrades to the IT infrastructure present an opportunity to synchronize data capture with follow-on efforts to evaluate resource effectiveness.

Establish a Tracking System for Recruiting Events and Other Local Marketing Activities

There is no system that tracks the effective dates, location, description, and cost of recruiting events and other local marketing activities. The use of Operations and

Maintenance (O&M) resources to support different types of events is a key policy variable in the recruiting process, and it is not possible to understand the effectiveness of these activities without a system that tracks those events. Collecting this information will likely fall to recruiters, but the potential enterprise-wide gains from identifying the most-effective marketing activities could outweigh the burden of collecting the data, especially if the IT modernization saves significant recruiter time in other areas.

Establish a Requirement for an Advertising Data Feed to Estimate ROI from Advertising

The Air Force does not have access to granular data on the advertising spots that it purchases or their associated impressions. The Army's experience shows that it is possible to obtain these data, but the Air Force must establish a specific request for the data feed and store it for evaluation purposes. GAO noted that the Air Force does not allocate a significant amount of funding for local advertising activities, but, ideally, any local purchases would face the same requirements and be incorporated into the data feed.

Experiment with Different Approaches and Learn What Works

Closing gaps in resource and outcome data collection would put the Air Force in a position to capitalize on one of the primary advantages of marketing research, which is the ability to strategically vary resources in a way that enables planners to observe the effects. In the aforementioned 1984 advertising mix experiment, the DoD intentionally varied the advertising expenditures in different locales to better understand the effectiveness of the level of advertising, as well as joint versus service-specific advertising. With robust data collection, planners could begin deploying resources experimentally through various pilot tests that could reveal which marketing tactics are effective and which should be redesigned or deprioritized. Though it is difficult to speculate about how much resource savings are possible through such approaches, the scale of the budgets involved suggests that even small improvements in the resource mix could save substantial resources.

Conclusion

Facing constraints in the number of recruiters and an increasingly uncertain recruiting environment, the Air Force Recruiting Service is exploring new tools and tactics to maximize the effectiveness of its recruiters. These modernization efforts include upgrades to the recruiting IT infrastructure to ease the administrative burden on recruiters. In addition to technological improvements, the Air Force needs innovative ways to implement data-enabled decisionmaking processes that use resource allocations based on rigorously measured ROIs for different types of resources. In this Perspective, we have described ways that the Air Force could estimate the ROIs, but we also documented that the Air Force lacks detailed and accurate data throughout the recruiting process to put these methods into practice. We have also provided four specific recommendations that could put the Air Force in a position to make the most of its efforts toward making data-enabled resource allocation decisions while demonstrating efficient resource management to future auditors and congressional overseers.

Notes

[1] Most notably, the advertising budget increased from $60.9 million in FY 2017 to $114.5 million in FY 2018 (Department of the Air Force, 2019) and remained at over $92 million, according to figures provided by the Air Force Recruiting Service. However, the number of recruiters and the budget for enlistment bonuses remained constant over this period. Roughly 80 to 90 percent of the total marketing budget goes toward national advertising rather than local advertising, materials, and recruiter activities.

[2] Resourcing can also be complicated by the budgeting process. The process allocates marketing resources through Operations and Maintenance (O&M) funding while enlistment incentives fall under Military Personnel funding. Congressional approval is required to move funds across accounts. If one resource is more efficient for meeting the Air Force's recruiting requirements, planners would ideally reallocate resources prior to the budget being approved by Congress, because reallocating midyear requires a special request to Congress. Effective resourcing requires strategic, multiyear planning.

[3] Alternatively, there are techniques to statistically adjust the control areas to form a weighted comparison group that closely mirrors the treated areas.

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Acknowledgments

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About This Perspective

Recent audit findings and congressional inquiries show that the U.S. military services must be prepared to justify their marketing and recruiting budgets based on the expected return on investment. Calculating the return on investment for a recruiting resource, such as advertising, requires detailed and accurate data on how the resource has been employed, as well as data on the resource costs. This Perspective describes challenges that prevent the Air Force from making data-enabled resource allocation decisions and presents recommendations for overcoming these challenges.

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