



**A Comparison Study of Onward to Opportunity (O2O)
Utilizing a Matched Comparison Group from The Veterans
Metrics Initiative (TVMI): Sampling Frame and Outcome
Analysis**

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Executive Summary

This evaluation aimed to examine two employment outcomes: job retention and salary, for veterans who used O2O compared to a matched group of veterans from The Veterans Metrics Initiative (TVMI) study who did not use employment programs. This report summarizes the sampling frame and background sample descriptions of the Onward to Opportunity (O2O) program utilized to match a sample of veterans with similar characteristics who were not employed and did not use any employment program components within the first 3 months after separation. Decisions on the sampling frame were collectively determined in weekly meetings between Clearinghouse for Military Family Readiness at Penn State and Syracuse University Institute for Veterans and Military Families analysts to achieve data harmonization between the two datasets.

O2O service member and veteran participants from 2017 to 2019 were included in the sample. To approximate the TVMI sample, these participants needed to start the O2O program within 6 months of their terminal leave/separation date or within 36 months after terminal leave/separation. Approximately 11,235 service members and veterans were included in the O2O sampling frame. TVMI sample includes veterans who transitioned from military service in 2016, did not use employment programs, were not full-time students, and were not working full-time (n=1,263).

The two samples were matched on the following demographic characteristics: age, gender, race/ethnicity, paygrade, branch, and level of education at enrollment. The matched sample was created using Greedy one-to-one Nearest Neighbor method with a 0.1 caliper. Each outcome analysis has its own matched one-to-one sample; therefore, the sample size for the matched sample is significantly smaller than the size of the sampling frame. Power analysis was conducted to ensure an adequate sample size to detect a difference at 80% power (.05 alpha).

For the outcome analysis, the methods varied based on the research question. For salary, a one-way ANCOVA was run to test group differences, controlling for propensity to participate in the intervention. Logistic regression was used to analyze leaving for a better opportunity at 6-month and 12-month follow-ups.

There were differences between O2O and TVMI participants in salary outcomes. Participants who started the O2O program (any O2O component) (n=319), regardless of completing the program (i.e., an intent-to-treat analysis) had significantly higher salaries (\$57,351) than a matched TVMI sample (n=319) who did not participate in employment programs (\$51,520). Participants who completed both Onward to Your Career (OTYC) and Online Coursework (OCW) (n=288) had a higher starting salary (\$58,802) compared to a matched TVMI sample (n=288) who did not participate in employment programs (\$52,951). Participants whose paygrade is E6 and lower and who completed both the OTYC and OCW (n=165) had significantly higher salaries (\$51,848) compared to a matched TVMI sample (n=165) who did not participate in employment programs

(\$38,303). There were no significant differences in salary between participants who completed only OCW (n=174) (\$64,595) and the matched TVMI sample (n=174) (\$62,874). There were no significant differences in salary between participants hired 45 days or more after eligibility to get hired who participated in OTYC and OCW (n=251) (\$59,641) compared to a matched TVMI sample (n=251) who did not participate in employment programs (\$55,279).

Leaving a job for a better opportunity and certification exam voucher outcomes include the following: O2O participants who completed the 6-month follow-up were 2 times more likely to leave their job for a better employment opportunity than TVMI participants who did not participate in employment programs. There were no significant differences for the 12-month follow-up. 16% received the voucher for taking the certification exam (reported by Salesforce). Data was not available on passing certification examinations.

Results should be interpreted with caution due to large amounts of missing outcome data and outcome data imprecision due to necessary assumptions (e.g., eligibility for work) and response option matching in the harmonization of the datasets. For example, salary response options were asked as a range in TVMI and O2O; furthermore, the range scaling differed between the two sources. Also, the variables included in the propensity score were limited to demographic information. They did not include other confounding details (i.e., mental health symptoms, medical discharge) that could impact job attainment and salary, as in previous TVMI analyses. Nevertheless, the results indicate the positive impact O2O has on participants related to employment outcomes.

1. Introduction

The Clearinghouse for Military Family Readiness at Penn State (Clearinghouse) collaborated with Syracuse University's D'Aniello Institute for Veterans and Military Families (IVMF) to assess the impact of the Onward to Opportunity (O2O) program¹. The team implemented a quasi-experimental study design to compare a group of O2O program participants to a demographically similar group of transitioning service members from The Veterans Metrics Initiative (TVMI) who did not participate in employment programs. Before conducting this matched-group comparison, the Clearinghouse identified employment program components commonly used by transitioning service members and identified O2O's program components that align with what transitioning service members have previously endorsed. Several employment components, including those used by O2O, were found to have a significant and positive impact on employment-related outcomes. A prior report titled *Onward to Opportunity and Effective Employment Components: A Comparison Study Utilizing Data from The Veterans Metrics Initiative (2022)* provides information about these findings. This report also laid the groundwork for this evaluation by describing an additional quasi-experiment study of the O2O program components in terms of the matching information gathered in the TVMI study. The evaluation stage of this effort required two phases: (1) data harmonization and identification of the sampling frame and (2) outcome analysis using a matched-propensity comparison group.

This report describes the data harmonization of the O2O and TVMI samples and the results from the analysis. A description of the sampling frame and O2O's data collection methodology during the sampling timeframe and the matching process for the O2O and TVMI samples is provided. The process resulted in the ability to examine outcomes using a propensity-matched comparison group from the TVMI sample and the results of this analytic sample.

To harmonize the data and specify the sampling frame, IVMF and Clearinghouse researchers met weekly over several months to:

- (1) understand the available data and the data collection process,
- (2) make data harmonization decisions, and
- (3) develop protocols to create a matched sample between the two data sources.

Limitations exist because both samples come from existing data sets not designed for this specific evaluation inquiry. Therefore, the discussions involved considering the strengths and limitations of each data source to ensure the creation of the strongest-aligned comparison group.

¹ O2O is a free career-training program that is designed to improve the vocational well-being of Service members who are transitioning out of the military, their spouses, and veterans.

Ultimately, this work resulted in the following:

- (1) the establishment of an O2O dataset for the evaluation;
- (2) a sampling frame (i.e., who should be included in the O2O sample), and
- (3) possible evaluation questions based on outcome data availability between the two samples.

This effort refined this evaluation to examine employment outcomes, including job attainment, higher salary, and better job opportunities between veterans who used O2O compared to a matched group of veterans with similar demographic characteristics who did not use any employment programs.

Using this comparison group from the TVMI data, an analysis was conducted to examine outcomes in the O2O sample. The results are described. Finally, recommendations and potential next steps are provided based on the strengths and limitations identified during data collection and evaluation design discussions between the two teams.

2. O2O Program

O2O is a career-training program that offers industry-specific curricula and other employee support services at no cost to the program participant. O2O is offered nationwide at military installations across all Service branches. Depending on the participant's location, O2O is also offered online. Historically, the online option was only offered to individuals who lived more than 50 miles away (or within reasonable commuting distance) from an installation; however, since the COVID-19 pandemic, the online mode of delivery has become more common. Some O2O cohorts participate in a hybrid version of the program, where an introductory professional development course is administered on-base, and the subsequent professional certification instruction is offered online. Online-only participants did not always receive the introductory professional development course (i.e., Onward to Your Career [OTYC]) as it was not fully digitized until 10/1/2021. Otherwise, they received the same course material and referral services as the face-to-face cohorts. The duration of the program is typically six months; however, participants have access to O2O's content for up to 1 year.

The O2O program consists of three main parts: (1) a career orientation called OTYC, (2) industry-validated career training, and (3) financial resources for certification. Employment services (e.g., career fairs, resume writing, and interview preparation) are offered via a partner organization, Hire Heroes USA [HHUSA]. This evaluation focuses on the first two parts of O2O: OTYC and the industry-validated career training referenced in the report as Online Coursework (OCW).

2.1. Onward to Your Career (OTYC)

The O2O program varies slightly among the installation, online, and community-based implementations. These differences mainly exist in the OTYC portion of the program. OTYC includes modules with career development, networking and branding, civilian

workplace content, an employer panel, and resources provided by partner veteran service organizations. On installations, OTYC typically lasts 3 days; however, some community-based cohorts use an adapted 1-day version, and the OTYC program later added an online option; however, the dates of these analyses do not include the online option. The modules can vary by installation. OTYC components include a career planning and exploration employment component delivered by mentors/coaches or networking groups.

2.2. Career Training and Certification Opportunities

O2O has several learning pathways designed to tailor the participants' employment-related training needs based on their desired career track. Examples of career tracks include information technology, business or project management, and the customer service industry. Often, these learning pathways offer coursework that fulfills the educational requirements for specific industry certifications. Career (job) training is delivered to participants via direct instruction.

2.3. Funding for Certifications

O2O also provides participants funding for certifications. Participants are expected to finish coursework in 90 days and complete a series of practice exams. After satisfactory completion of three practice exams, participants receive a voucher for the certification test administered by various certifying bodies (e.g., Project Management Institute). In the previous report on TVMI coding of common components, this voucher was noted as a barrier reduction component that provides tangible support to program participants. Table 1 summarizes O2O program components and their delivery processes.

Table 1

O2O Common Components

Component	O2O
OTYC Career planning, exploration <ul style="list-style-type: none"> • Mentor/Coach • Networking Group 	Training is done via mentors/coaches and networking groups and includes access to career coaching services, networking events, and workshops. The goal is to identify possible career tracks and for participants to learn personal marketing techniques and skills.
Job training <ul style="list-style-type: none"> • Direct Instruction 	Includes access to industry-validated training and incorporates three learning pathways to tailor training to participants' industry of choice.
Vouchers for certification exams <ul style="list-style-type: none"> • Tangible Support 	A barrier reduction component of vouchers to take certification exams after the completion of practice exams.

2.4 Referral to Employment Services

Once participants complete their coursework, they are referred to HHUSA for additional employment services if desired. Table 2 describes the employment components included in the HHUSA portion and their delivery processes.

Table 2
HHUSA Common Components

Component	HHUSA
Interviewing <ul style="list-style-type: none"> • Rehearsal/Role-Play/Practice • Mentor/Coach 	HHUSA provides interview assistance or matching when individuals are ready.
Resume writing <ul style="list-style-type: none"> • Mentor/Coach 	Individual learning plans include personalized one-on-one resume writing assistance with a coach or mentor. HHUSA may also provide resume templates.

3. O2O Sample Description

This section describes the O2O program’s data collection process and the overall sample. Furthermore, this section provides descriptive statistics relating to harmonization between the O2O and TVMI samples.

3.1. O2O Data Collection

The program delivery process was a frequent topic of discussion between the IVMF and Clearinghouse teams to recognize the data collection timeline, procedures, and sources of data collection. O2O uses several methods to garner data on and from participants.

Background Demographics: Demographic information and goals are collected in an initial assessment form. Terminal leave date, separation date, and current employment status are also collected at the time of enrollment. However, when veterans are unsure of their separation date, they are asked to complete that information with a missing code (1/1/1900). For this evaluation, this variable was cleaned by using the terminal leave date and supplementing it with the date of separation and the date of separation from active duty. Current employment status is also asked at the time of enrollment.

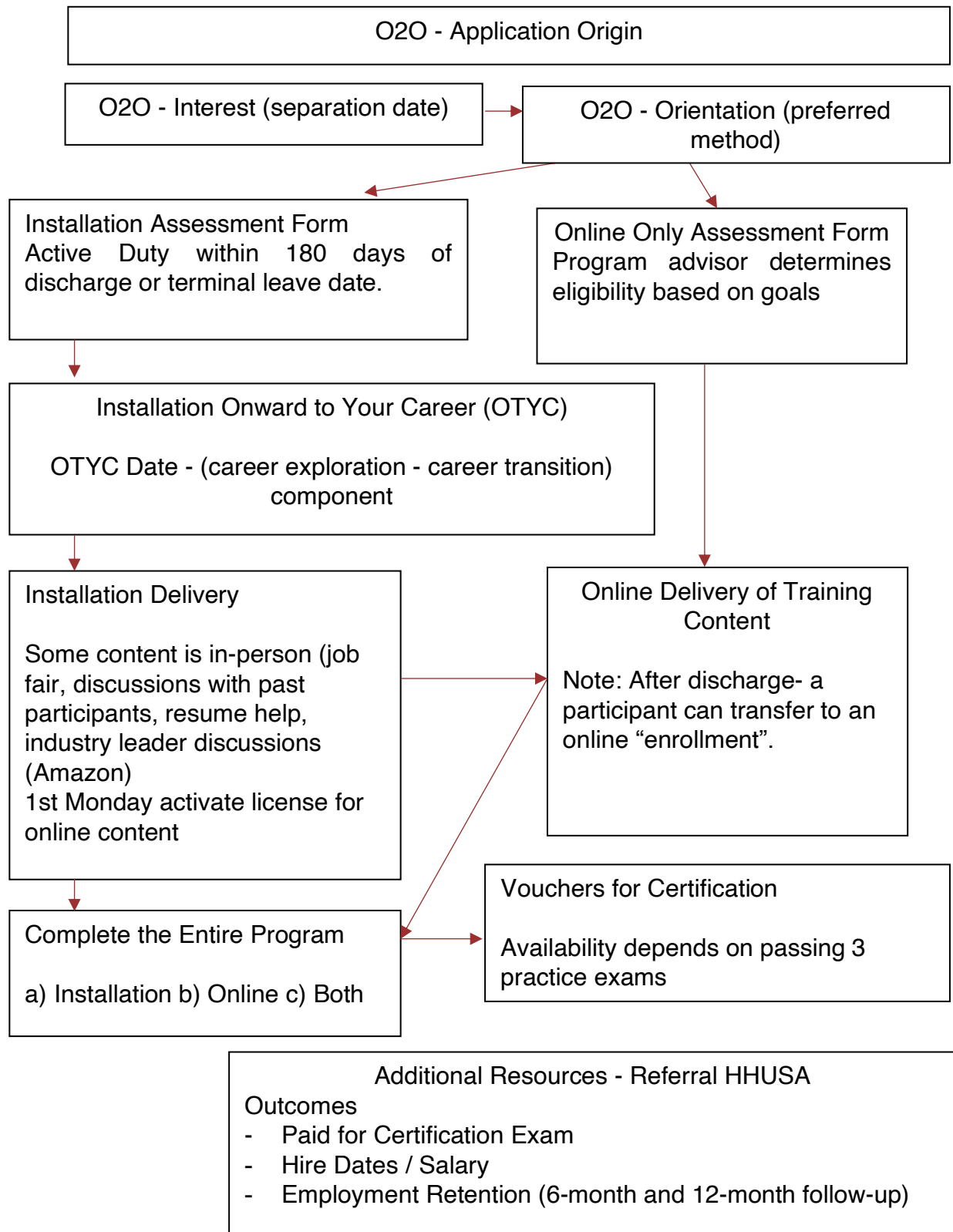
Program Utilization of O2O: The IVMF program provided the cohort start date. The start date was used to determine the eligibility for the sampling frame. The OTYC Training Status and OCW Status variables were dichotomized as complete or not complete and used to create four groups of possible O2O dosage: neither OTYC nor OCW, only OTYC, only OCW, or both OTYC and OCW.

Outcome Tracking of O2O: Program managers collect follow-up information from participants through phone calls and a review of LinkedIn member profiles. O2O also receives weekly reports from HHUSA on hire dates and salaries for individuals using their services, and O2O adds this information to their tracking system. O2O and TVMI used ranges as response options to gather salary information, but both datasets used different scaling. Therefore, the data were recoded (O2O text values: \$20,000-\$29,999) to reflect

the middle numeric value (i.e., \$25,000). Figure 1 describes the data collection and program process model.

Follow-up Surveys: Brief six-month and 12-month follow-up surveys are also deployed to participants who attained a job while participating in the program. This information includes if they retained employment six or 12 months (survey dependent) after their hire date and, if not, the reason for departure (e.g., better employment opportunity, poor job fit). The six-month survey was introduced in 2018, and the 12-month survey was introduced in 2019.

Figure 1
O2O Data Collection and Program Process Model



3.2. O2O Sample

There were 34,289 participants who applied for O2O within the sample frame time period. Approximately 67% of applicants started the program (n=23,098). Table 3 includes a description of the sample of participants by military connection who applied and who started O2O.

Table 3

Description of Who Applied and Started O2O by Military Connection

Military Connection	Did not Start O2O	Started O2O	Total Applied	Percent Started
Active Duty or Activated NGR	3,279	8,958	12,237	73%
Veteran	4,876	8,791	13,667	64%
Spouse/Partner	70	820	890	92%
NGR	991	1,126	2,117	53%
Activated NGR and Veteran	56	85	141	60%
Activated NGR and NGR	45	51	96	53%
Veteran and Spouse/Partner (Dual military)	1,617	2,785	4,402	63%
Veteran and NGR	176	363	539	67%
More than 2 connections (Activated NGR, Spouse, Veteran, NGR)	81	119	200	60%
Total	11,191	23,098	34,289	67%

Note. Military connection variables are notated as they exist in the O2O data. n=92 were missing military connection and excluded from the sample.

Most applicants were either veterans (n=13,667) or active duty/activated NGR members (n=12,237). While spouses/partners account for 2.5% of applicants (n=890), they had the highest rates of starting O2O. This finding was confirmed through logistic regression provided in Table 4. Note: spouses/partners account for a much higher percentage of program applicants and participants now compared to this sampling time frame, closer to 15%.

Table 4

Likelihood of Starting the O2O Program by Military Connection

Military Connection	OR [Lower CI, Higher CI]
Active Duty or Activated NGR	Reference Group
Veteran	0.66 [0.63, 0.70]***
Spouse/Partner	4.29 [3.35, 5.49]***
NGR	0.42 [0.38, 0.46]***
Activated NGR and Veteran	0.56 [0.40, 0.78]**
Activated NGR and NGR	0.42 [0.28, 0.62]***

Military Connection	OR [Lower CI, Higher CI]
Veteran and Spouse/Partner (Dual military)	0.63 [0.59, 0.68]***
Veteran and NGR	0.76 [0.63, 0.91]**
More than 2 connections (Activated NGR, Spouse, Veteran, NGR)	0.54 [0.40, 0.72]***

Note: Recoded missing PE_PI start date as 0.

As shown in Table 4, spouse/partner participants were 4.29 times more likely to start the O2O program than active duty or activated NGR. All other groups were less likely to start the O2O program than the active duty or activated NGR group.

After examining who was more likely to apply and who was more likely to start the program, several inclusion criteria were used to establish a sample of O2O participants who best matched the TVMI comparison group. Criteria for inclusion in the final sample spanned two stages.

Stage 1

The first stage of the analysis includes determining the criteria for matching the O2O sample with the TVMI comparison group. The first criteria for the matched sample include individuals who participated in O2O between May 2017 and May 2019. This timeframe was determined based on data availability, given that O2O had a different data collection platform prior to May 2017. The sample timeframe was cut off at May 2019, given the likelihood that COVID-19 would play a confounding role in O2O participant outcomes, particularly amid the onset of the pandemic in early 2020.

O2O participants who were full-time students at the time of enrollment were excluded from the sample, given that they may participate in O2O for intermediate goals that are more related to educational attainment than job attainment, higher salary, and job retention. The Coast Guard and Coast Guard Reserves were also excluded from the sample.

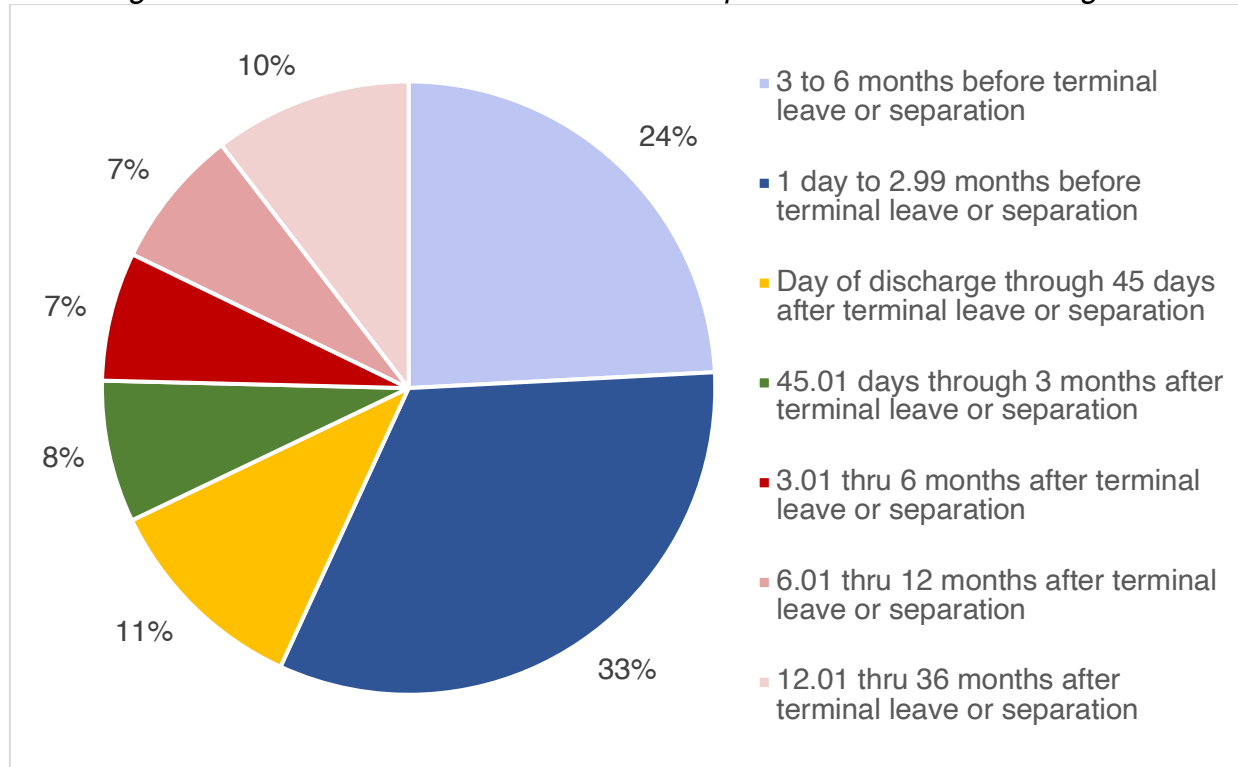
Given that the TVMI comparison group consists of veterans, the O2O sample was limited to service members or veterans. To further approximate the TVMI sample, service members or veterans must have started O2O after separation or roughly within 180 days of their terminal leave or separation date. Program participants were excluded if they started O2O more than 36 months after terminal leave/separation, given that the TVMI sample consists of veterans who have recently transitioned from military service.

Most O2O participants (57%) started within six months of their terminal leave date. Of those starting O2O before terminal leave or separation, 24% began O2O 3 to 6 months before, and 33% started the program 0 to 3 months earlier. Eleven percent started the program between their day of separation and 45 days after separation, and 8% started the program between 45 days and 3 months after separation. Almost a quarter of participants started O2O 3 to 36 months after terminal leave or separation. Figure 2 below

displays the breakdown of O2O participants by the timing of terminal leave or separation date and O2O start date.

Figure 2

Percentage of Time between Terminal Leave or Separation Date and Starting O2O



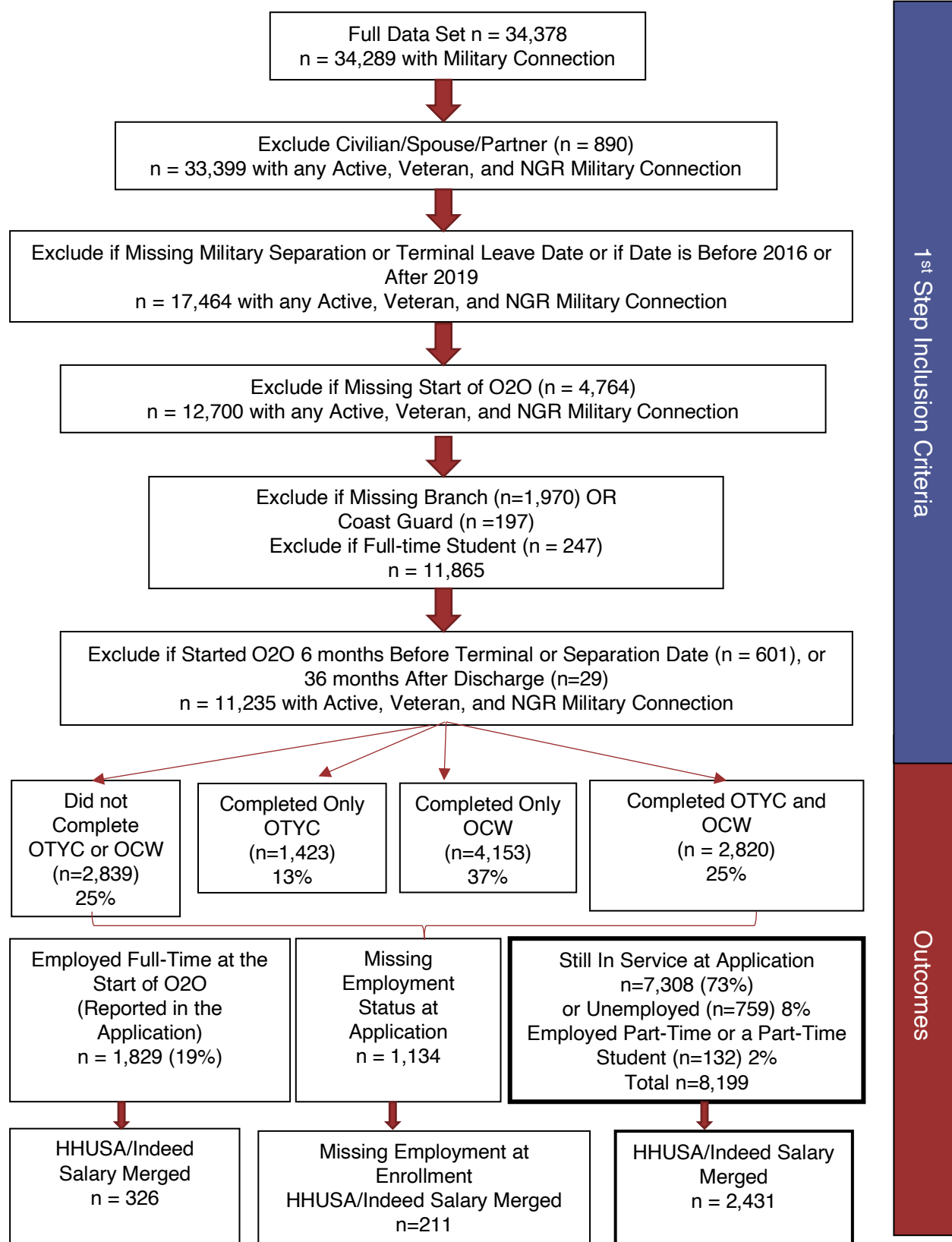
After applying stage 1 inclusion criteria, the sample was categorized into the four possible types of program dosage to determine whether program dose impacted program outcomes. The four possible doses include: (1) participants who did not complete either OTYC or OCW (n=2,839; 25%); (2) participants who completed OTYC only (n=1,423; 13%); (3) participants who only completed OCW (n=4,153; 37%); and (4) participants who completed both OTYC and OCW (n=2,820; 25%).

Stage 2

The second stage inclusion criteria are specific to each research question. As such, participants who did not have information related to job attainment, job retention, or salary were excluded during this step when the missing data was relevant to the outcome analyzed. This second stage was repeated for each sample to ensure all relevant data was included for each outcome analyzed.

Figure 3 provides the full diagram of the first and second-stage criteria and the sample sizes after applying the inclusion criteria. The bolded box (i.e., still in service at application, unemployed, and working part-time) is the focus of most analysis in this report.

Figure 3
O2O Sample Inclusion Criteria after Selection of 2017 to 2019 O2O Sample



Descriptive statistics for each dose of O2O are provided in Table 5. After the second stage, or inclusion of those working full-time at enrollment with salary from HHUSA or LinkedIn data, the sample was slightly older, with a higher percentage of males and white non-Hispanics and fewer racial and ethnic minorities. Furthermore, the sample was somewhat more likely to be married and included higher enlisted (E7 to E9) and officer paygrades (O1 to O8). Likewise, the second stage included more participants with bachelor's or master's degrees than after applying the first stage inclusion criteria.

Table 5
O2O Descriptive Statistics by O2O Component/Dosage Completed

Demographics	Neither OTYC and OCW (n=2,839)	Only OTYC (not OCW) (n=1,423)	Only OCW (not OTYC) (n=4,153)	Both OTYC and OCW (n=2,820)	Overall Sample (n=11,235)
Age in Years at the Start of O2O^a	37.53 (SD=8.17)	36.60 (SD=8.85)	38.71 (SD=8.45)	37.84 (SD=8.83)	37.93 (SD=8.56)
Male (Gender)^b	82.9%	80.8%	84.8%	82.2%	83.2%
Race/Ethnicity^c					
White NH	53.9%	47.5%	56.5%	50.4%	53.1%
Black NH	21.7%	22.8%	19.9%	22.0%	21.2%
Hispanic	12.5%	17.3%	10.6%	14.6%	13.0%
Asian NH, Other Race NH, > 1 Race NH	13.5%	14.4%	14.5%	14.6%	14.3%
Marital Status^d					
Single	16.1%	17.1%	14.1%	17.1%	15.8%
Married, Domestic Partner	72.5%	70.8%	77.3%	73.2%	74.6%
Separated, Divorced, Widowed	11.4%	12.1%	8.6%	9.7%	9.6%
Paygrade^e					
E1 to E3	1.0%	1.6%	0.8%	0.8%	1.0%
E4	8.9%	13.2%	6.6%	10.9%	9.1%
E5	12.3%	16.8%	10.2%	12.2%	12.1%
E6	11.4%	10.6%	7.8%	9.9%	9.6%
E7 to E9	27.4%	28.4%	23.6%	27.4%	26.1%
O1 to O3	19.8%	12.2%	22.5%	17.4%	19.2%
O4 to O7	16.8%	13.8%	26.3%	17.8%	20.2%
Branch^f					
Army	47.6%	39.0%	44.4%	50.0%	45.9%
Navy	15.1%	25.3%	20.1%	25.1%	20.7%
Air Force	17.5%	7.5%	16.7%	8.7%	13.7%
Marine Corps	9.5%	23.2%	7.9%	12.4%	11.4%
National Guard or Reserve	10.5%	5.0%	11.1%	4.1%	8.4%

Demographics	Neither OTYC and OCW (n=2,839)	Only OTYC (not OCW) (n=1,423)	Only OCW (not OTYC) (n=4,153)	Both OTYC and OCW (n=2,820)	Overall Sample (n=11,235)
Level of Education ^g					
High School/GED	3.7%	8.1%	2.0%	5.0%	4.0%
Some College	17.4%	27.1%	11.0%	18.0%	16.4%
Associates Degree	9.6%	11.6%	6.3%	9.8%	8.7%
Bachelor's Degree	38.9%	31.4%	38.3%	36.2%	37.0%
Master's or Professional Degree	30.5%	21.9%	42.4%	30.9%	33.9%
Military Connection ^h					
Active Component and Activated NGR	58.0%	82.7%	59.6%	83.8%	68.2%
Veteran	38.3%	16.3%	36.2%	15.1%	28.9%
National Guard/Reserve	3.7%	1.0%	4.1%	1.1%	2.9%

Note. For 1st stage inclusion criteria, see Figure 3. Veterans working full-time or missing enrollment work variables were not matched. ^a n= 11,113; ^b n= 11,185; ^c n= 11,025; ^d n= 9,597; ^e n= 11,115; ^f n= 11,112; ^g n= 11,055; ^h n= 11,191. For descriptive purposes for military connection, select all that apply options were recoded. “Activated NGR” and “veteran” were recoded to “Activated NGR”; “Activated NGR” and “NGR” were recoded to “Activated NGR”; “veteran” and “spouse/partner” recoded to “veteran”; “NGR” and “veteran” were recoded to “NGR”; Participants with more than two military connections were omitted (n = 44).

Tests to determine sample differences between O2O dosage types were conducted. For these analyses, the group of participants who completed **both OTYC and OCW** was compared with those who completed neither OTYC nor OCW, participants who completed OTYC only, and participants who completed OCW.

Compared to participants who completed OTYC and OCW, participants who completed neither OTYC nor OCW were:

- 13% less likely to be male;
- 10% less likely to be White NH; 21% more likely to be Hispanic;
- 14% more likely to be in the Army; 29% less likely to be in the Navy; 22% more likely to be in the Marine Corps; and
- 40% less likely to have attained a master’s degree or higher.

Compared to participants who completed OTYC and OCW, participants who completed only OTYC were:

- 36% less likely to be in the Army; 2.1 times more likely to be in the Marine Corps;
- 22% more likely to be Hispanic;
- 20% less likely to have attained a bachelor’s degree; and
- 38% less likely to have attained a master’s degree or higher.

Compared to participants who completed OTYC and OCW, participants who completed only OCW were:

- 21% more likely to be male;
- 28% more likely to be White NH race; 12% less likely to be Black NH race; 31% less likely to be Hispanic;
- 20% less likely to be in the Army; 25% less likely to be in the Navy; 2.1 times more likely to be in the Air Force; 39% less likely to be in the Marine Corps; 2.9 times more likely to serve in the NGR;
- 64% more likely to have attained a master's degree or higher; and
- 72% less likely to be Active Duty/Activated NGR; 3.2 times more likely to be a veteran; 3.7 times more likely to be NGR.

However, the O2O program dosage and delivery mode are confounded. All participants who completed only OTYC or completed both OTYC and OCW did so at an installation, while 2% of participants who completed only the OCW did so at an installation. That is, 98% of participants who completed OCW did so online. Only 3% of participants who did not complete OTYC or OCW did so at the installation. That is, 97% who did not complete OTYC or OCW participated online.

Table 6 provides O2O program utilization based on the two-stage inclusion criteria process. The sample with outcome data includes a larger percentage of participants that completed both OTYC and OCW, used O2O at an installation, and completed the program.

Table 6
O2O Program Utilization Descriptive Statistics

	1 st Stage Inclusion Criteria (n=11,235)	2 nd Stage NOT Working full- time at enrollment with Salary by HHUSA or LinkedIn ¹ (n=2,431)
Completed OTYC ^a	43.7%	72.9%
Condense LMS - Skillsoft ^b	99.8%	99.7%
Mode of Program Delivery ^c		
Online	55.5%	26.1%
Installation	44.5%	73.9%
Online Coursework Completion		
None	17.2%	2.2%
Discontinued	18.2%	13.3%
Completed	64.6%	84.3%
Online Course Name		
Project Management (PMP)	50.2%	53.1%
Six Sigma Green Belt (SSGB)	7.4%	6.1%
Human Resources (PHR)	6.5%	7.3%
CompTIA Security+	6.0%	6.5%
Project Management (CAPM)	5.5%	5.2%
Human Resources (SPHR)	4.6%	4.0%
Certified Information Systems Security Professional (CISSP)	4.5%	4.7%
CompTIA A+	3.7%	2.9%
Other ^d	9.1%	7.2%
Status of Program Enrollment		
Graduated	63.8%	83.1%
Withdrawn (full future eligibility)	3.5%	1.8%
Withdrawn (ineligible for all future)	32.5%	15.1%
Contact information sent to HHUSA ^d	53.5%	91.1%
Coursework Completion		
Completed Neither	22.7%	3.5%
Completed only Onward to Your Career (OTYC)	12.7%	13.8%
Completed only Online Coursework (OCW)	34.7%	23.7%
Completed both OTYC & OCW	29.9%	59.1%
Goal of Program Completion		
Seeking meaningful employment	57.4%	66.6%
Seeking improved employment	21.3%	21.5%
Seeking improved technical competencies	20.3%	11.6%
Working Full-time at the time of enrollment	55.9%	0%

Note. Only the 2nd stage samples are described: ^a n = 2,431 (missing is recoded to 0); ^b n = 2,415; ^c n = 2,429; ^d (other course names <2% [e.g., Human Resources (aPHR), Cisco Certified Network Associate (CCNA)])

O2O Outcome Tracking

Currently, the O2O program does not systematically collect data for program completion date (i.e., the exact date the participant completes their online coursework) or passing certification. HHUSA collects employer data on an installation, follows up with each cohort, and shares the data they collect on job-related outcomes with IVMF.

O2O collects some outcome data related to individuals' goals. For example, these data may examine whether people seek improved employment (e.g., promotion within a company), meaningful employment, or improved technical competencies (i.e., training or pathway to higher education). Examining individual goals is essential as many participants using job training and upskilling programs may already have jobs but may be underemployed or wish to pursue other careers. For these individuals, job attainment is not a relevant outcome to measure. Instead, job promotion or leaving a job for a better opportunity may be more appropriate indicators of program success. Therefore, researchers planned to examine O2O program components and consider a broad spectrum of possible employment-related outcomes, including job attainment, job retention, and promotion (i.e., salary increase). This section describes these outcomes based on the team's decisions.

Job Attainment and Retention

Two opportunities were identified to learn about job attainment and retention outcomes. The first outcome was examined utilizing data gathered from HHUSA and supplemented with LinkedIn data. The second outcome used the 6-month and 12-month follow-up surveys fielded by O2O.

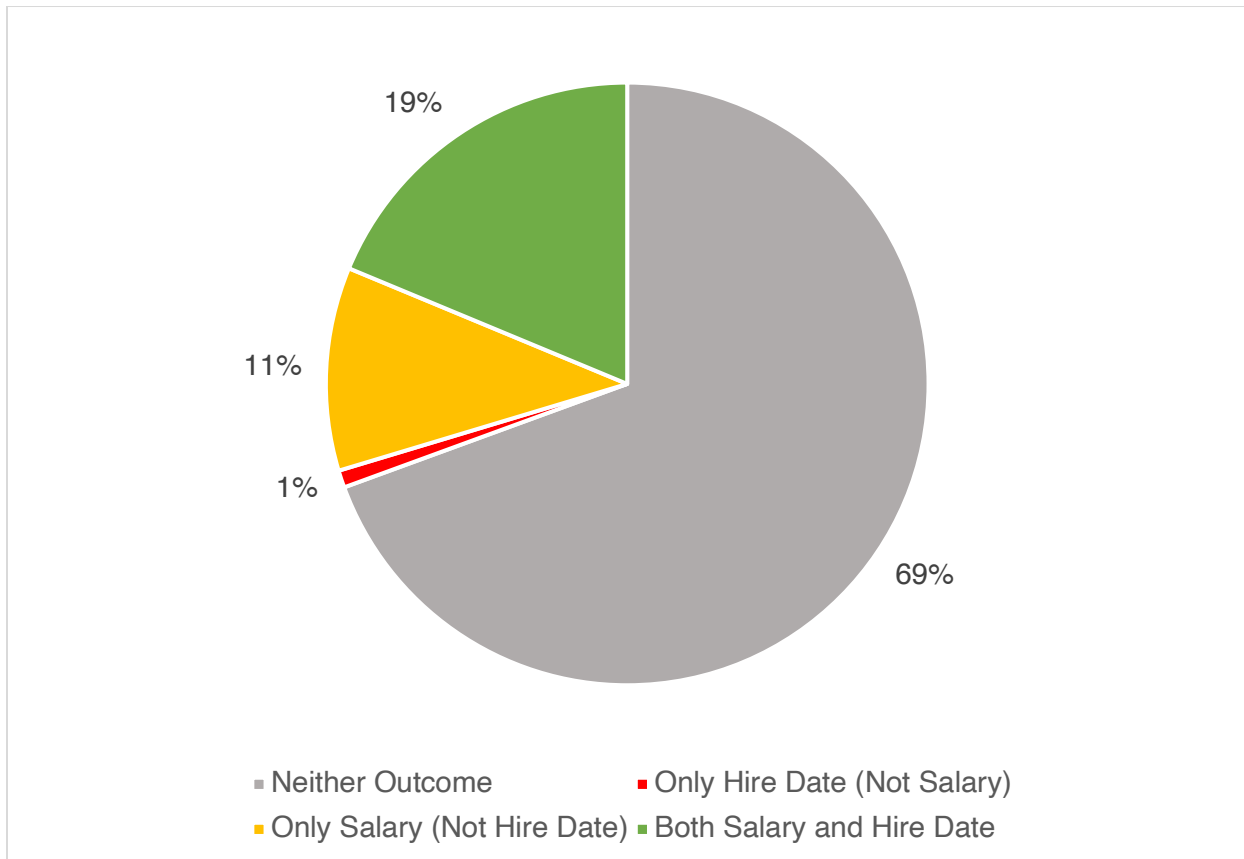
In discussions between the O2O and Clearinghouse teams, we agreed on calculating estimated eligibility to be hired based on the program's start date or the terminal leave/separation date, whichever is later. First, a time variable was computed between the program start date and the terminal leave/separation date. This calculation approximated when a participant started the O2O program in alignment with the TVMI data collection methodology. This continuous time variable was recoded to reflect the following discrete time ranges: (1) started the O2O program before terminal leave or separation; (2) within 45 days after terminal leave or separation; (3) between 45 days and 3 months after terminal leave or separation; (4) between 3 and 6 months after terminal leave or separation²; (5) between 6 and 12 months after terminal leave or separation; and (6) 12 and 36 months after terminal leave or separation. HHUSA collects data for hire dates up to 18 months after program utilization. Approximately 75% of participants utilized the O2O program within 45 days of the terminal leave/separation date, which aligns with Wave 1 of the TVMI survey (refer to Figure 2).

² Groups a and b are combined to reflect any participant (active duty/activated NGR or veteran) who could have used the program after discharge.

Second, we computed the time in months it took to be hired using the HHUSA/LinkedIn data. There was a response option for “Currently Active Duty” for the enrollment work status variable. Active-Duty and Activated National Guard Reserve were recoded to “Currently Active Duty” and unemployed at separation or terminal leave date. Participants may remain in training for up to 6 months before completing the program. Some participants may not yet be looking for work immediately, so they may take longer to be hired. O2O does not currently ask for this type of information. Outcome timeframe blocks were computed using the program start date to match the TVMI data corresponding to the Wave 2 (6 to 9 months after separation) and Wave 3 (12 to 15 months after separation) surveys.

Figure 4 shows the distribution of availability of outcome data across participants. Only 19% of the sample had both salary and hire date. A small group of individuals only have a hire date (1%), and a proportion of the sample only has salary data (11%). Most participants (69%) without a hire date are also missing salary.

Figure 4
Availability of Types of Outcome Data



Note. n=8,199 (participants who were active duty/activated NGR, unemployed, or employed part-time).

The hire date and salary collected from HHUSA are not representative of the full O2O sample that participated in or completed the program. Among Active Duty or Activated NGR and those who were unemployed or employed part-time, only n=1,612 had a hire date. For matching purposes, the group with salary regardless of hire date (n=2,431) and a smaller overlapping matching that incorporates the hire date into the estimate to match with the TVMI data collection windows was used (n=1,536).

Salary

Salary is only asked once of O2O participants and was not collected at enrollment among those working. Among those who got a job, starting salary can be examined. HHUSA provided salary information. When salary information was missing from HHUSA data, information was supplemented with the salary data collected through LinkedIn profile examination or by IVMF staff who spoke directly with participants. Among those participants not working full-time at enrollment, the average salary was \$66,930 (n=2,430) gathered from the HHUSA data (after O2O enrollment). Participants with salary outcome data were:

- 31% more likely to be male;
- 24% less likely to be officer (O1 to O3) paygrade compared to E4 paygrade;
- Air Force, Marine Corps, and NGR participants were less likely to have salary information compared to Army;
- Participants with a high school education were 46% less likely, and participants with some college classes were 27% less likely to have salary information compared to participants with a bachelor's degree; and
- Active or Activated NGR participants were 2.2 times more likely to have salary information compared to veterans and NGR.

Table 7 displays the descriptive statistics for both groups of participants with and without salary data.

Finally, an examination on the type of O2O program dose was examined: in all cases, participants that completed neither OTYC nor OCW (82% less likely), only OTYC (73% less likely), only OCW (80% less likely) to have salary information compared to participants who completed both OTYC and OCW.

Table 7*Descriptive Information About O2O Sample With and Without Salary Outcome Data*

Demographics	Not Working Full-Time Any O2O Participation with Salary (n=2,431)	Not Working Full-Time Any O2O Participation without Salary (n=5,768)	Not Working at Enrollment Has Salary Information OR [Lower CI, Higher CI]
Age in Years at the Start of O2O^a	38.38 (SD=8.42)	37.72 (SD=8.68)	1.00 [0.99, 1.01]
Male (Gender)^b	86.4%	82.9%	1.31 [1.13, 1.51]***
Race/Ethnicity^c			
White NH	54.9%	53.7%	Reference
Black NH	20.3%	19.7%	1.00 [0.87, 1.15]
Hispanic	13.1%	13.8%	1.02 [0.86, 1.21]
Asian NH, Other Race NH, & > 1 Race NH	13.1%	14.3%	0.91 [0.78, 1.06]
Paygrade^d			
E1 to E3	0.5%	1.1%	0.54 [0.28, 1.03]
E4	8.0%	8.9%	Reference
E5	10.1%	11.7%	0.93 [0.73, 1.19]
E6	9.2%	9.1%	1.05 [0.80, 1.37]
E7 to E9	27.5%	25.1%	1.09 [0.83, 1.41]
O1 to O3	19.3%	20.4%	0.76 [0.60, 0.97]*
O4 to O7	21.5%	21.3%	0.89 [0.66, 1.21]
Branch^e			
Army	51.0%	45.0%	Reference
Navy	24.6%	21.3%	1.03 [0.90, 1.17]
Air Force	9.5%	14.8%	0.55 [0.46, 0.66]***
Marine Corps	10.7%	12.4%	0.80 [0.68, 0.95]*
National Guard or Reserve	4.4%	6.6	0.56 [0.44, 0.71]***
Level of Education^f			
High School/GED	3.3%	4.8%	0.54 [0.39, 0.73]***
Some College	14.4%	16.5%	0.73 [0.62, 0.87]***
Associates Degree	8.8%	8.8%	0.92 [0.75, 1.12]
Bachelor's Degree	38.1%	36.0%	Reference
Master's, Doctorate or Professional Degree	35.3%	33.9%	1.06 [0.92, 1.22]

^a n = 8,101; ^b n = 8,165; ^c n = 7,952; ^d n = 8,119; ^e n = 8,095; ^f n = 8,075.

Figure 5 includes average salary information by component. Those who completed only OTYC reported the highest average salary (\$75,862), and those that completed neither reported the lowest average salary (\$65,394). These differences are significant; however, participants who complete OTYC may be systematically different from participants who only complete OCW. For example, more complete data was provided by those that completed OTYC and OCW, as demonstrated by the sample sizes for each group. A

matched propensity within the O2O sample could ensure these groups were similar before making any conclusions.

Figure 5
Average Salary from HHUSA (Filled in with LinkedIn) by O2O Components Received

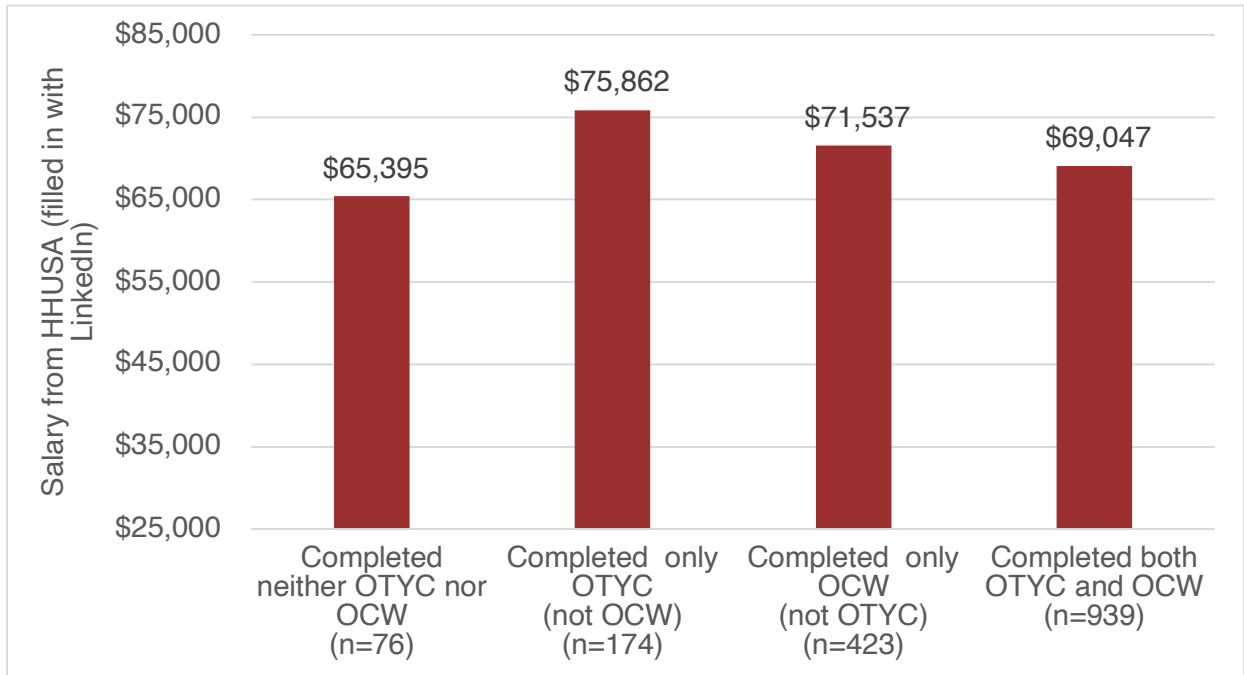
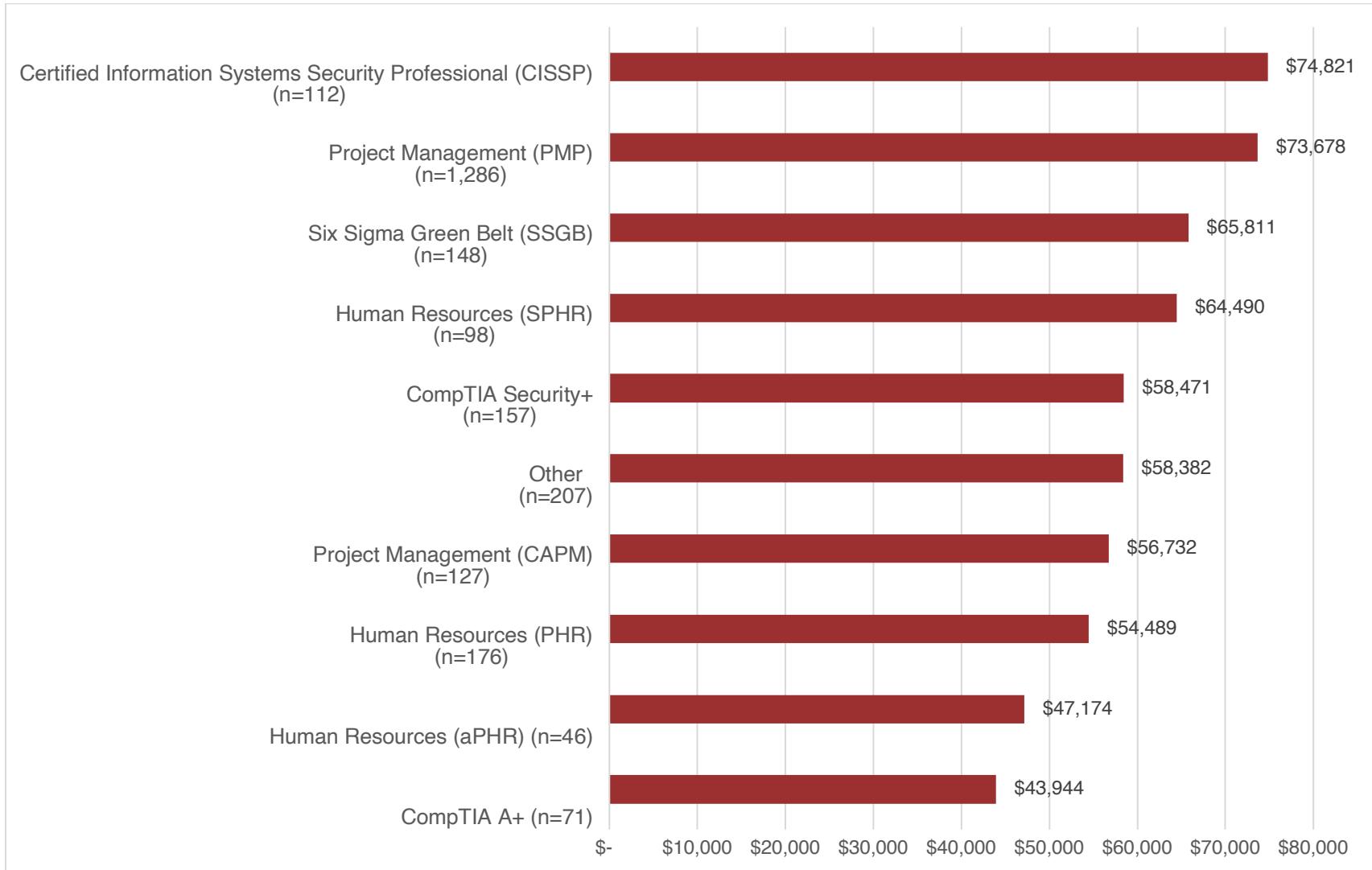


Figure 6 shows salary gathered by HHUSA/LinkedIn data by job training pathway among participants that were not working at enrollment. The highest reported salaries were among those who participated in the Certified Information Systems Security Professional (CISSP) training with an average salary of \$74,821 and the Project Management pathway (PMP) with an average salary of \$73,678. The lowest reported salaries were among the Human Resources tracks (aPHR and PHR) and the CompTIA A+ (\$43,944 to \$47,174). These salaries may naturally correspond to market demand for specific skills, the requirements for industry pathways, and the alignment of the training to an individual's career level, or salaries may reflect possible gender differences in specific career pathways.

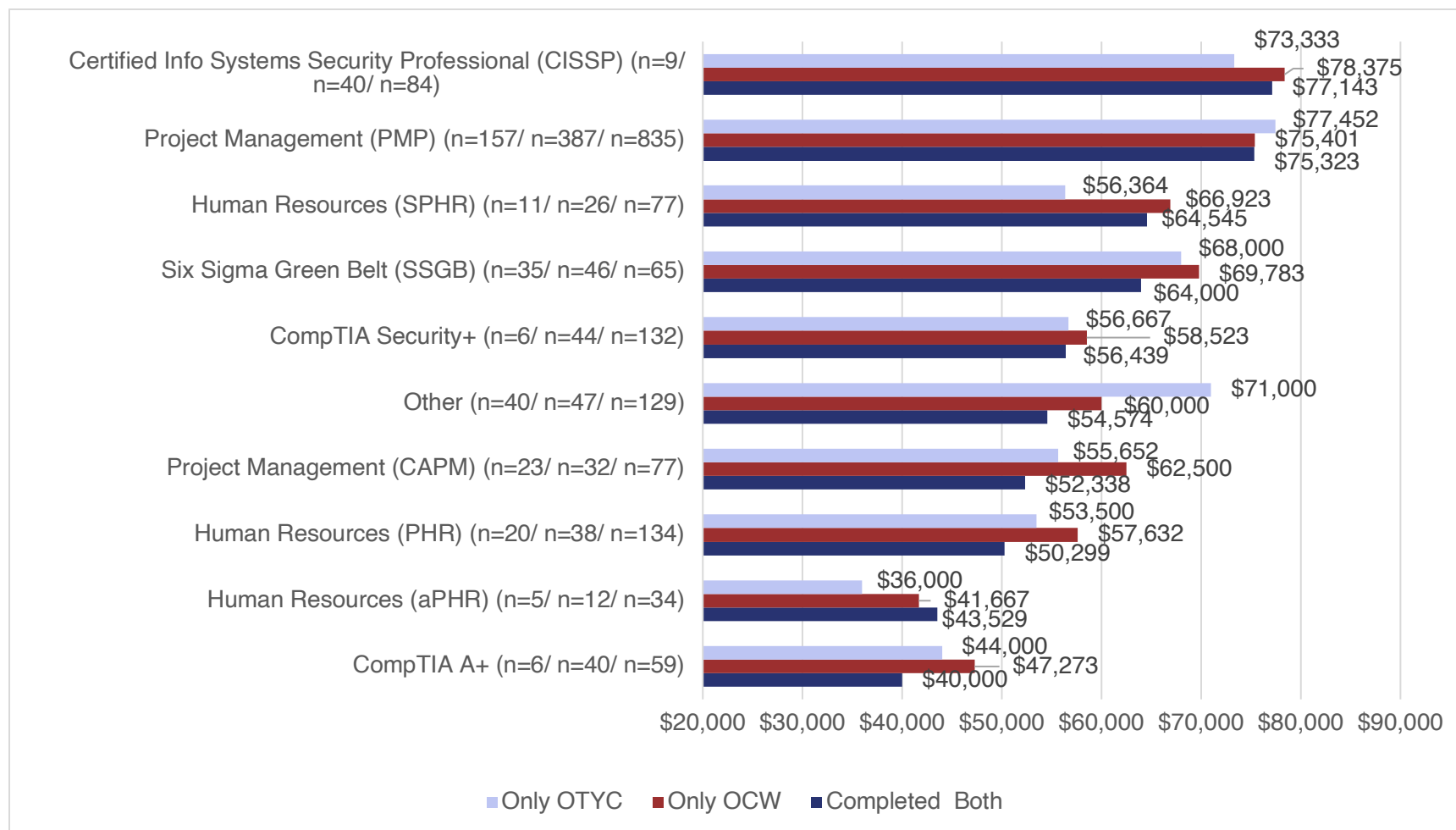
Figure 6
Salary by Job Training Pathway



Note. Among all participants who were not working at enrollment.

Figure 7 depicts salary by job training pathway and the dosage of O2O completed: OTYC only, OCW only, and both OTYC and OCW. The sample size for those who did not complete OTYC or OCW was too small to describe. Future data collection efforts should include all participants regardless of program completion.

Figure 7
Salary Comparisons by Job Training Pathway and O2O Components Received

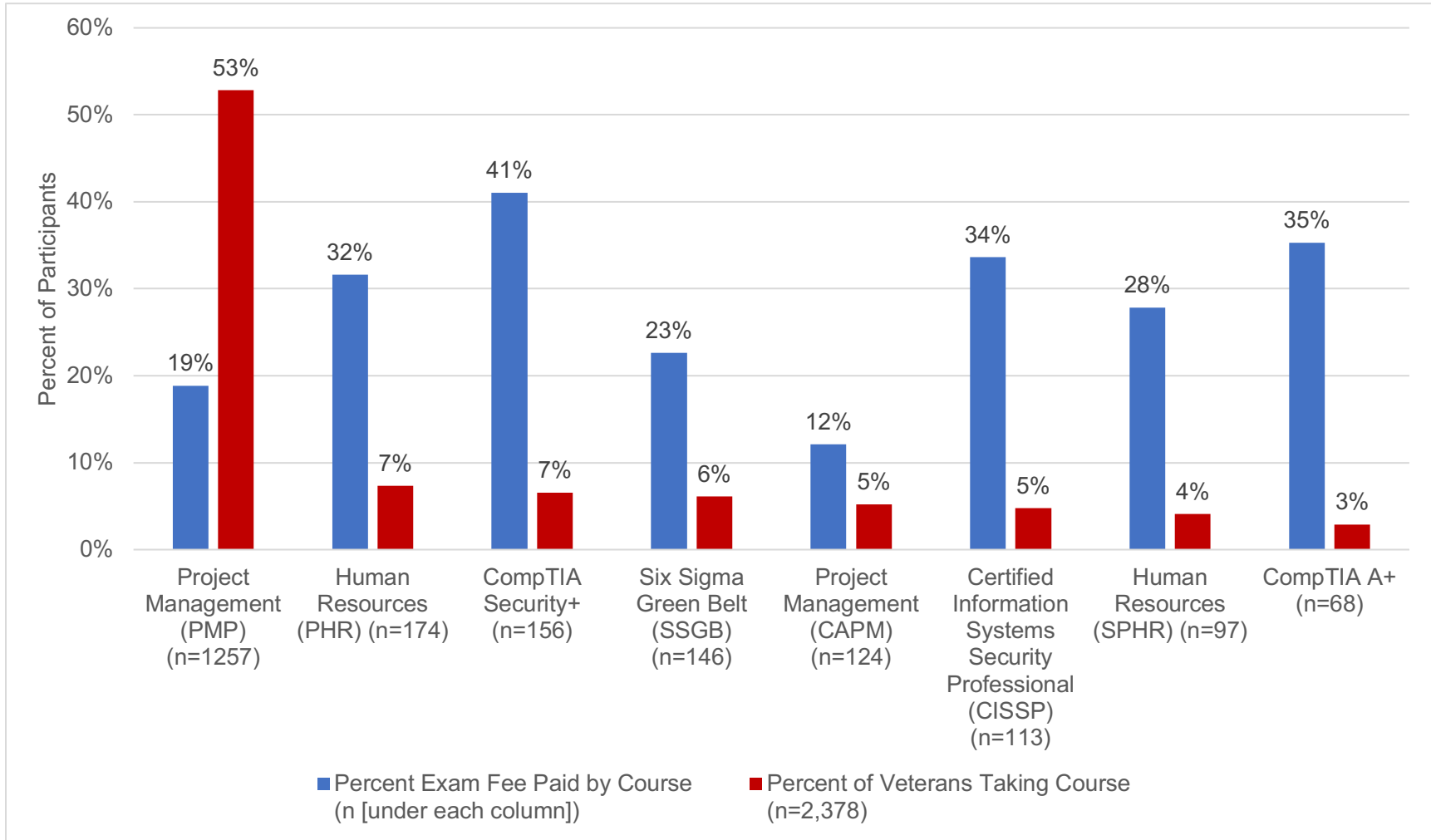


Certification Examinations Fee Paid

Less than 16% of the analytic O2O program sample had their exam fee paid. Among participants who were not working at enrollment (i.e., active duty/activated NGR, unemployed) and had salary information, 22.9% had their exam fee paid. Nearly 28% of participants who completed both the OTYC and the OCW had their exam fee paid.

Figure 8 shows the percentage of participants in the O2O program by OCW job training pathway among participants that were not working at enrollment with salary from HHUSA. The highest groups receiving an exam fee voucher from the program (reported by Salesforce) participated in the following OCW pathways: CompTIA Security+ (41%), Comp TIA A+ (35%), and Certified Information Systems Security Professional (CISSP) (34%). The lowest group of exam fees paid (CAPM and PMP), but the highest percentages of veterans taking the course (PMP) were in the project management pathways. These percentages may reflect industry expectations of coursework completion but not certification to be employed in the role.

Figure 8
Results for Examination Paid



Note. This figure is for descriptive purposes only and is not a matched sample.

4. The Veterans Metrics Initiative Study and Sample

This project uses data from TVMI, a longitudinal survey of well-being and program use by U.S. military veterans transitioning from the military. TVMI is unique because it is the first study to examine the transition experiences of post-9/11 veterans immediately following separation from the military. In September 2016, 48,956 veterans, who had separated within the prior 3 months from active duty or activated status, were mailed an invitation to participate in the TVMI web-based survey. Invitations were mailed to veterans using information gathered from the VA/DoD Identity Repository database housed within the Defense Manpower Data Center, which maintains military service data. To be eligible to participate, veterans had to have served more than 180 days. They had to have separated from one of the four active components (i.e., Army, Navy, Air Force, or Marine Corps) or reserve components (i.e., Army National Guard, Air National Guard, Army Reserve, Air Force Reserve, Navy Reserve, or Marine Corps Reserve) within the past 90 days. An effort was made to ensure that the sample was representative of the veteran population. Of the 48,956 invited to participate, 9,566 veterans completed the first survey in November 2016, resulting in a response rate of 23% for Wave 1 (Vogt et al., 2018). Participants were surveyed at five additional time points (i.e., waves) in approximately 6-month intervals between November 2016 and May 2019 (approximately 2 ½ years). A smaller subset of veterans continued to be surveyed about four years after discharge (Nov 2020 to January 2021).

TVMI study participants were asked to indicate the specific employment programs they used during transition. A *program* in the study was defined as “any activity designed to meet your specific needs.” The nominated program could have taken many forms. For example, the program could have been information the veteran had gathered on a website, a service the veteran had used, an online instruction the veteran had used, or a class delivered in an in-person setting by a facilitator or counselor. Veterans were asked 37 questions about programs used since discharge from the military in four domains: vocation, financial/legal/housing, health, and social. These questions were adapted from The Philanthropy Roundtable (Meyer, 2013). Seven questions focused on employment. Veterans were asked about employment programs they had used over the last 3 months in several employment areas. They were asked to nominate their use of specific program types (e.g., online job databases, career fairs, resume writing, job placement, career counseling, and job training) and provide the program name. Veterans could nominate two programs per question and list the same program for more than one question; therefore, the veteran could nominate up to 14 employment programs. Veterans also had the option to select “I did not participate in these types of programs” for each of the seven employment program questions. Appendix A includes the employment program questions from TVMI. Veterans’ employment program use was summed and dichotomized to create two groups: those who participated in employment programs and those who did not participate in any employment programs. The matching criteria included no employment program use, working full-time, and not being a full-time student. Descriptive statistics are provided for the comparison group. See the first column in Table 8.

For reference, descriptive statistics are provided for veterans who did not use employment programs and were working full-time and for veterans who used job training and certification programs at Wave 1.

Table 8

Descriptive Statistics of the TVMI Sample without Employment Program Use and Who Used Job Training Programs

	Comparison Group: TVMI (No Program Use & Not Full-Time Work/Student) (n=1,001)	For Reference Only:	
		TVMI (No Employment Program Use & Working Full-Time) (n=1,960)	TVMI (Nominated Job Training/Certification Program Use) (n=1,297)
Age	32.18 (SD=10.39)	33.76 (SD=9.7)	38.41 (SD=8.42)
Male (Gender)	76.0%	88.0%	87%
Race/Ethnicity White Only NH	50.9%	72.3%	74.9%
Black Only NH	14.4%	8.1%	7.5%
Hispanic (Any Race)	17.2%	7.7%	9.3%
Asian HPI, Other Race NH	15.9%	7.1%	3.4%
Marital Status Single	31.8%	15.7%	7.6%
Married/Domestic Partner	60.0%	77.3%	82.4%
Sep/Divorced/Widowed	8.2%	6.9%	9.1%
Paygrade E1 to E3	13.9%	7.9%	1.4%
E4	31.3%	23.7%	6.9%
E5	19.1%	17.8%	10.3%
E6	9.3%	9.3%	10.9%
E7 to E9	13.0%	15.3%	24.1%
Warrant Officers	1.2%	1.3%	2.8%
O1 to O3	4.6%	8.3%	14.6%
O4 to O7	7.6%	16.4%	29.1%
Branch Army	40.8%	26.2%	30.5%
Navy	20.7%	14.0%	18.0%
Air Force	16.9%	18.2%	26.0%
Marine Corps	16.0%	15.0%	10.6%
National Guard or Reserve	5.7%	26.6%	14.8%
Level of Edu. HS/GED	37.9%	21.4%	4.9%
Some College	27.2%	26.2%	14.8%
Associate Degree	12.5%	12.9%	11.2%
Bachelor's Degree	11.9%	18.5%	28.7%
Master's or Higher	10.6%	21.0%	39.5%

Note. 23.6% (n=852) of the TVMI sample were full-time students and thus excluded from the matching criteria. O2O had missing data for honorable discharge status. Among those with data, 99% were honorably discharged. In the TVMI sample, 81.1% were honorably discharged, but there was a category for “not discharged” that also needs to be considered.

5. Matching Samples

As previously mentioned, the Clearinghouse and IVMF teams met weekly to harmonize the samples between the datasets and make decisions to ensure the comparability of samples for O2O from the TVMI dataset. After carefully reviewing variables between the two data sources and harmonizing the variables to equate response options, the following characteristics of the sample could be matched: age, gender, race/ethnicity, marital status, paygrade, branch of service, and level of education. Part-time student status was missing from a large portion of the O2O dataset and thus was excluded as a matching criterion. A list of variables provided by O2O is included in Appendix B.

The following five analyses have descriptive statistics after matching with TVMI group for each sample:

- Intent-to-treat³ (Table 9);
- Completed both OTYC and OCW (Table 10);
- Participants who were E6 paygrade or lower (Table 11);
- Completed only OCW (Table 12); and
- Hired 45 days after eligibility (Table 13).

Matching criteria vary based on the question. Logistic regression results are presented in Appendix C.

In both groups, the first selection criteria included participants not working full-time (i.e., active duty/ activated NGR, unemployed, working part-time) at the time of enrollment and not full-time students. The research team identified two possible vocational outcomes that could be examined using the matched sample across the two datasets, job retention and salary. Descriptive information about job attainment is provided for the O2O sample.

Passing certification could not be examined as an outcome, given that the O2O data did not track passing certifications. Also, that question was not explicitly asked of participants in the TVMI sample. TVMI only asked veterans if the program used provided access to testing fees. However, this question is a possibility for future TVMI data collection.

6. Outcome Results

This section explores outcomes, including salary and leaving a job for a better opportunity. This section also provides results for the matched samples and revised demographic information for each analytic sample. Sample descriptive statistics were similar between the two stages, and probability scores were tested to confirm that matching was successful.

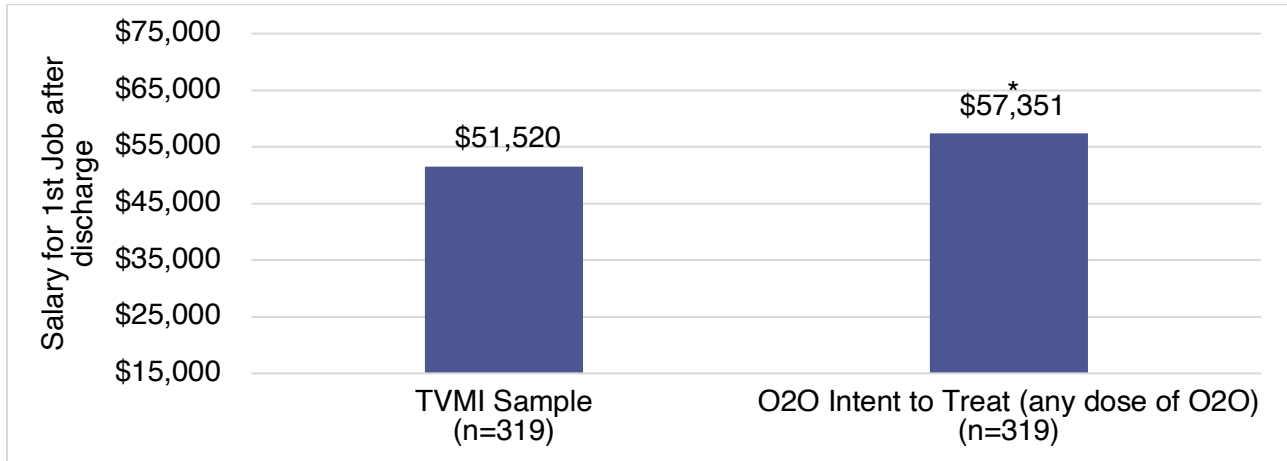
³ A method for analyzing results where all participants are randomized and analyzed according to the group they were originally assigned, regardless of what treatment (if any) they received.

6.1. Salary

Participants who started the O2O program with any dose regardless of completion (i.e., intent-to-treat) had significantly higher salaries than the matched TVMI sample for their initial salary $F(1, 637) = 7.13$ $p < .01$ (Figure 9). The Cohen's d effect size = .22 (a small effect size).

Figure 9

Salary Comparisons Any O2O (Intent-to-Treat) Against Matched TVMI Sample



Note. Salary information is systematically missing by O2O dosage type except for the OTYC and OCW group. An ANCOVA was conducted, controlling for the propensity of participation in the intervention.

Table 9

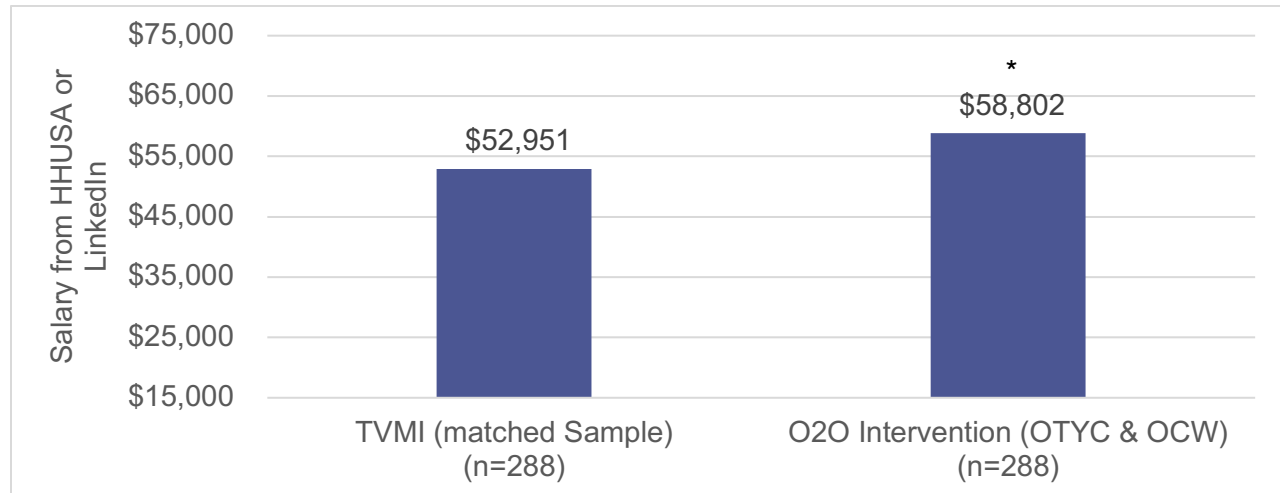
Any O2O (Intent-to-Treat) Against TVMI Matched Sample Description

	Intervention Group: Any O2O Program Use (n=319)	Comparison Group: TVMI (No Employment Program Use) (n=319)
Age	33.92 (SD=9.07)	33.65 (SD=9.8)
Male (Gender)	79.6%	80.3%
Race/Ethnicity White Only NH	55.2%	57.1%
Black Only NH	16.6%	15.4%
Hispanic (Any Race)	17.9%	17.2%
Asian HPI, Other Race NH	12.2%	10.3%
Paygrade E1 to E3	3.4%	1.9%
E4	25.1%	27.3%
E5	22.3%	21.6%
E6	14.7%	12.5%
E7 to E9	12.2%	10.7%
O1 to O3	7.2%	10.3%
O4 to O7	14.4%	15.0%

Participants who completed OTYC and OCW had a higher starting salary than a matched TVMI sample who did not use employment programs $F(1, 574) = 6.18$ $p < .05$ (Figure 10). The Cohen's d effect size = .21 (a small effect size).

Figure 10

Salary Comparisons OTYC and OCW Against Matched TVMI Sample



Note. An ANCOVA was conducted, controlling for the propensity of participation in the intervention.

Table 10

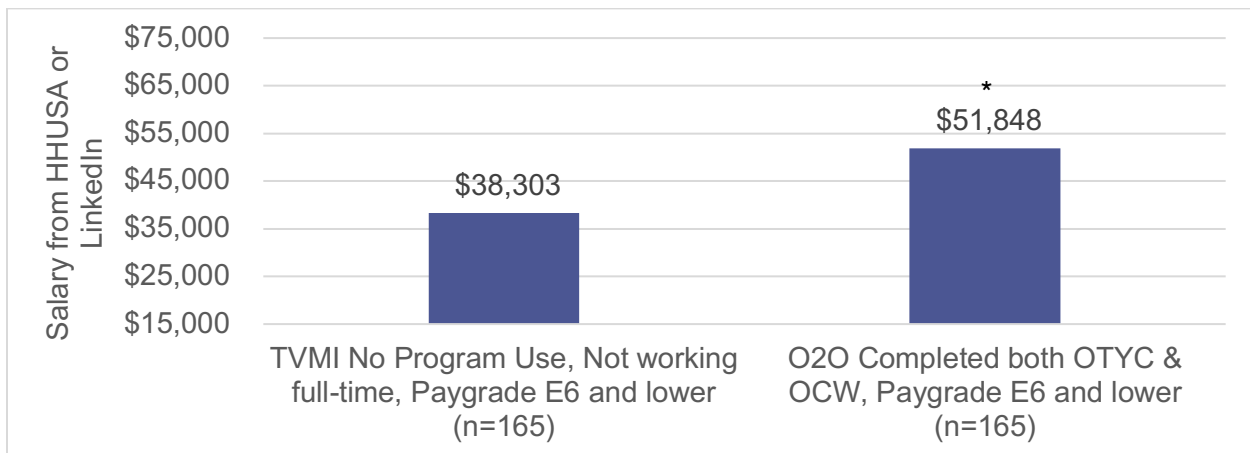
Completed OTYC and OCW Against TVMI Matched Sample Description

	Intervention Group: O2O OTYC & OCW (n=288)	Comparison Group: TVMI (No Employment Program Use) (n=288)
Age	34.74 (SD=9.42)	34.55 (SD=9.83)
Male (Gender)	79.5%	80.2%
Race/Ethnicity White Only NH	54.5%	56.6%
Black Only NH	18.4%	16.3%
Hispanic (Any Race)	14.9%	16.7%
Asian HPI, Other Race NH	13.2%	10.4%
Paygrade E1 to E3	2.4%	0.3%
E4	25.0%	24.3%
E5	20.8%	21.5%
E6	12.5%	13.2%
E7 to E9	11.8%	11.8%
O1 to O3	9.7%	11.5%
O4 to O7	17.0%	16.7%

Participants whose paygrade is E6 and lower and who completed both the OTYC and OCW intervention had significantly higher salaries than the matched TVMI sample. ($F(1, 329) = 51.65$ $p < .001$ (Figure 11). The Cohen's d effect size = .79 (a large effect size).

Figure 11

Salary Comparisons Paygrade E6 and Lower Who Completed OTYC and OCW Against Matched TVMI Sample



Note. An ANCOVA was conducted, controlling for the propensity of participation in the intervention.

Table 11

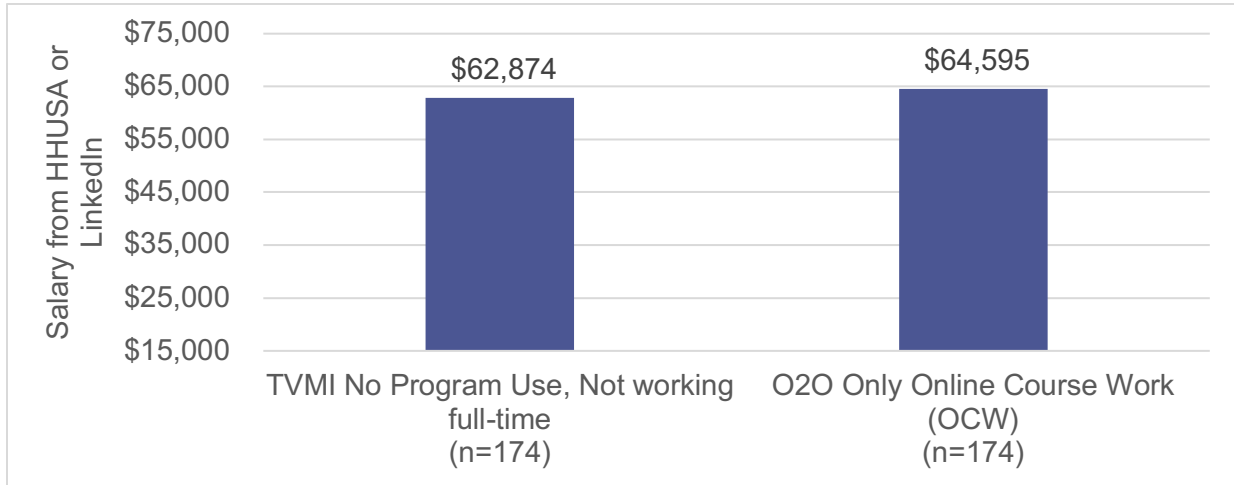
Paygrade E6 and Lower Who Completed OTYC and OCW Against TVMI Matched Sample Description

	Intervention Group: E6 and Lower Paygrade. O2O OTYC & OCW, Program Use (n=165)	Comparison Group: TVMI E6 and Lower Paygrade No Employment Program Use (n=165)
Age	29.39 (SD=6.47)	29.56 (SD=7.10)
Male (Gender)	83.6%	82.4%
Race/Ethnicity White Only NH	52.1%	54.5%
Black Only NH	18.8%	18.2%
Hispanic (Any Race)	21.2%	15.8%
Asian HPI, Other Race NH	9.7%	11.5%
Paygrade E1 to E3	4.8%	0.6%
E4	38.2%	42.4%
E5	36.4%	36.4%
E6	20.6%	20.6%
Highest Education < Bachelor's	80.0%	84.2%
Bachelor's Degree	17.0%	13.9%
Master's Degree or higher	3.0%	1.8%

There were no significant differences in salary between the OCW-only intervention and the matched TVMI sample for their initial salary ($F(1, 347) = .28, p = .595$ (non-significant)). See Figure 12 for salary estimates.

Figure 12

Salary Comparisons Completed Only OCW Against Matched TVMI Sample



Note. An ANCOVA was conducted, controlling for the propensity of participation in the intervention.

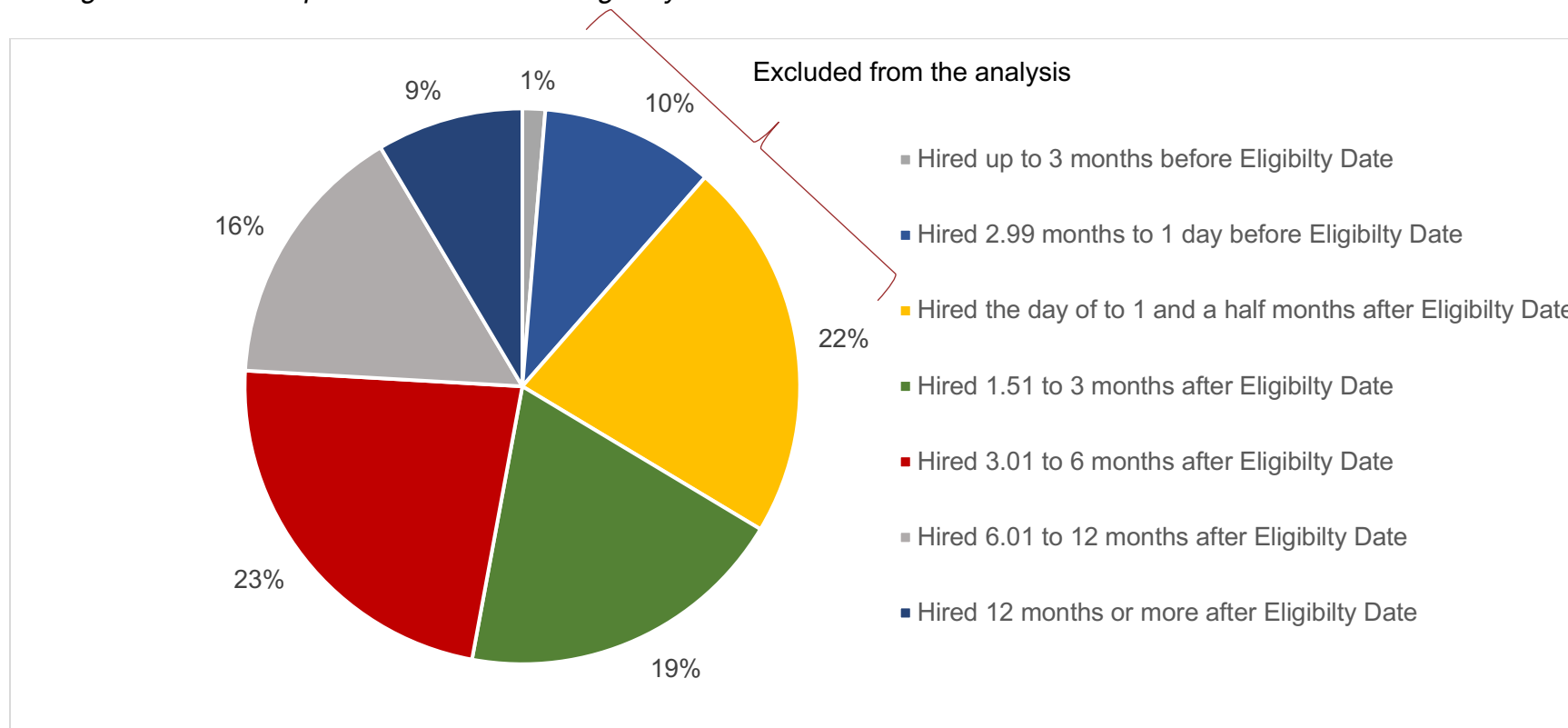
Table 12

Completed Only OCW Against TVMI Matched Sample Description

	Intervention Group: O2O Only OCW Program Use (n=174)	Comparison Group: TVMI (No Employment Program Use) (n=174)
Age	37.79 (SD=8.73)	37.38 (SD=9.79)
Male (Gender)	82.2%	81.0%
Race/Ethnicity White Only NH	61.5%	58.6%
Black Only NH	14.4%	16.1%
Hispanic (Any Race)	11.5%	13.8%
Asian HPI, Other Race NH	14.9%	11.5%
Paygrade E1 to E3	0.6%	0.0%
E4	10.3%	9.2%
E5	16.1%	16.1%
E6	12.6%	12.1%
E7 to E9	14.9%	16.7%
O1 to O3	17.8%	19.0%
O4 to O7	25.3%	25.9%

Figure 13 describes the sample Hired Date from Eligibility Hire Date (Terminal Leave Date or Started O2O, whichever is later). There were significant differences in the time it took participants in the O2O intervention to be hired. However, this result must be considered with caution due to a large amount of missing data, especially among O2O participants who did not have hire dates. Data collection for hire date was up to 18 months after separation; TVMI data collection had up to 4 years after separation (a large portion of the TVMI sample who were not working at Wave 1 were hired at Wave 5 (approximately 2 years after separation).

Figure 13
Timing between Participant Hire Date from Eligibility to be Hired



There were no significant differences in initial salary between the matched TVMI sample and participants hired 45 days or more after eligibility and participated in OTYC and OCW ($F(1, 501) = 2.85$ $p = .09$ (non-significant)). See Figure 14 for salary estimates.

Figure 14

Salary Comparisons Participants Hired after 45 Days Against Matched TVMI Sample

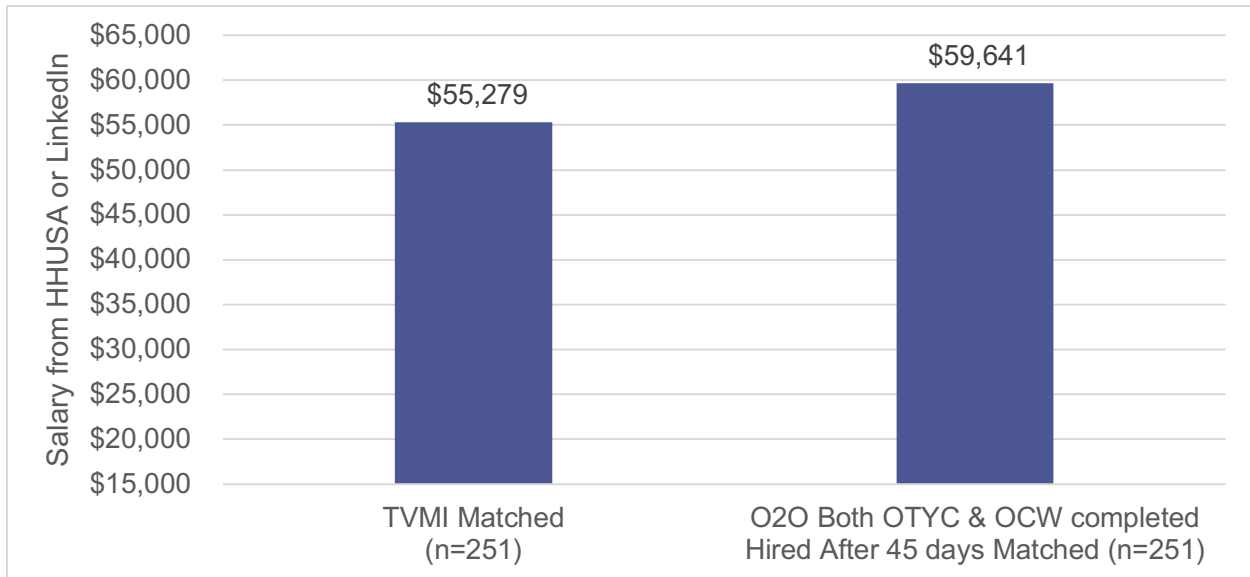


Table 13

Hired 45 Days after Eligibility and Completed OTYC and OCW Against TVMI Matched Sample Description

	Intervention Group: O2O OTYC & OCW Program Use, Hired 45 Days after Eligibility Date (n=251)	Comparison Group: TVMI (No Employment Program Use) (n=251)
Age	34.64 (SD=9.25)	35.19 (SD=9.83)
Male (Gender)	77.3%	80.1%
Race/Ethnicity White Only NH	53.0%	54.2%
Black Only NH	21.5%	17.1%
Hispanic (Any Race)	14.7%	16.3%
Asian HPI, Other Race NH	11.6%	12.4%
Paygrade E1 to E3	2.0%	1.6%
E4	22.7%	22.3%
E5	21.5%	19.5%
E6	11.2%	12.4%
E7 to E9	11.2%	13.1%
O1 to O3	14.7%	12.7%
O4 to O7	16.7%	17.5%

6.2. Leaving Job for a Better Opportunity

A follow-up survey is sent to participants with a confirmed hire date from HHUSA. A total of n=1,080 participants completed the 6-month follow-up survey. Exploration was conducted to determine who received the 6-month follow-up survey. First, 27% of participants with a confirmed hired date (n=3,926) received the 6-month follow-up survey⁴. A logistic regression was conducted to examine any other differences between those participants who completed the 6-month follow-up survey and those who did not complete the survey. Participants who were Black Non-Hispanic were 28% less likely to complete the 6-month follow-up survey compared to White Non-Hispanic participants. Warrant officers were 78% more likely to complete the 6-month follow-up survey than the E4 paygrade. Participants from the Navy were 22% more likely, and National Guard/Reserve participants were 33% less likely to complete the 6-month survey than participants from the Army.

Participants with a high school education were 59% less likely, and participants with some college credits were 34% less likely to complete the 6-month follow-up survey than participants with a bachelor's degree. Finally, participants who completed OTYC and OCW were 4.63 times more likely to complete the 6-month survey than the other groups. A similar pattern was identified in the 12-month follow-up. However, Navy participants were 52% more likely to complete the 12-month follow-up than Army participants.

Table 14

Likelihood of 6-month and 12-month Follow-Up Completion Among O2O Participants

	6-month Follow-Up Odds Ratio [CI]	12-month Follow-Up Odds Ratio [CI]
Age	1.00 [0.98, 1.01]	1.00 [0.98, 1.01]
Male	1.20 [0.98, 1.47]	1.24 [0.99, 1.56]
White NH (Reference Group)		
Black NH	0.72 [0.59, 0.87]**	0.70 [0.56, 0.88]**
Hispanic	0.98 [0.78, 1.23]	0.91 [0.70, 1.18]
Asian, HPI, Other, > 1 Race NH	0.84 [0.69, 1.04]	0.96 [0.76, 1.20]
E4 Paygrade (Reference Group)		
E1 to E3	0.65 [0.23, 1.88]	0.21 [0.03, 1.57]
E5	0.93 [0.65, 1.34]	0.88 [0.58, 1.35]
E6	1.24 [0.84, 1.81]	1.28 [0.83, 1.98]
E7 to E9	1.45 [1.00, 2.12]	1.42 [0.92, 2.19]
W1 to W5	1.78 [1.08, 2.96]*	1.94 [1.10, 3.43]
O1 to O3	1.15 [0.81, 1.63]	1.47 [0.99, 2.19]
O4 to O7	1.45 [0.95, 2.22]	1.49 [0.92, 2.42]

⁴ Only 17 participants who received the 6-month follow-up survey had the hire date and eligibility to be hired date.

	6-month Follow-Up Odds Ratio [CI]	12-month Follow-Up Odds Ratio [CI]
Army (Reference Group)		
Navy	1.22 [1.03, 1.45]*	1.52 [1.26, 1.84]***
Air Force	0.81 [0.64, 1.03]	1.06 [0.82, 1.37]
Marines	0.85 [0.66, 1.08]	1.02 [0.78, 1.33]
National Guard/Reserve	0.67 [0.49, 0.93]*	0.82 [0.57, 1.17]
Bachelor's Degree (Reference Group)		
High School	0.41 [0.24, 0.70]**	0.37 [0.19, 0.73]**
Some College	0.66 [0.52, 0.85]**	0.72 [0.54, 0.95]*
Associate Degree	0.79 [0.60, 1.05]	0.99 [0.73, 1.33]
Master Plus	1.08 [0.90, 1.29]	1.06 [0.86, 1.30]
Completed OTYC & OCW	4.63 [4.03, 5.32]***	4.52 [3.87, 5.28]***

Before matching, 12% of O2O participants and 16% of TVMI participants left their job for a better employment opportunity during the 6-month/TVMI Wave 2 follow-up survey. After matching, 13.7% of O2O participants and 7.4% of TVMI participants left their job for a better employment opportunity.

A matched propensity score was calculated among participants from the O2O sample who completed the 6-month follow-up and the TVMI Wave 2 data (approximately 6 months after separation). In the O2O 6-month follow-up, the initial question asked if the participant still worked at the last employer O2O has on record. Response options included “yes”; “no, I have since left this company”; “I was never employed here”; or “prefer not to answer”. If the participant left the organization, they were asked to indicate why they left this employer/organization. Response options for reasons for leaving included “better employment opportunity”; “higher education”; “poor fit”; and “other”. The time between the confirmed hire date and the date of the 6-month survey was, on average, 8.21 months (SD=2.32; Range: .43 months to 36 months). Two participants were dropped due to negative values. The better employment opportunity response option was recoded, dichotomized, and then merged with the Wave 2 TVMI variable change in employment.

For descriptive statistics of those who were matched, see Table 15. After matching, **participants in the O2O program were 2 times more likely to leave their job for a better employment opportunity** than the TVMI-matched sample who did not participate in employment programs.

Table 15*6-month/Wave 2 Likelihood to Leave Job for a Better Employment Opportunity (Any O2O)*

	Intervention Group:	Comparison Group:
	O2O Program Use & 6-month Follow-Up Survey (n=379)	Wave 2 TVMI (No Employment Program Use & Not Working Full-Time) (n=379)
Age	36.82 (SD=8.45)	36.90 (SD=10.39)
Male (Gender)	78.6%	78.6%
Race/Ethnicity White Only NH	50.9%	57.0%
Black Only NH	18.7%	15.3%
Hispanic (Any Race)	14.8%	13.2%
Asian HPI, Other Race NH	16.9%	14.5%
Paygrade E1 to E3	0.8%	1.1%
E4	12.1%	11.1%
E5	19.5%	21.5%
E6	12.9%	13.2%
E7 to E9	23.7%	24.0%
O1 to O3	16.9%	15.8%
O4 to O7	13.5%	14.5%

Before matching, 5.8% of O2O participants and 14.8% of TVMI participants left their job for a better employment opportunity during the 12-month/Wave 3 follow-up survey. After matching, 7.6% of O2O participants and 5.0% of TVMI participants left their job for a better employment opportunity. A matched propensity score was calculated among participants from the O2O sample who had completed the 12-month follow-up and TVMI Wave 3 data (approximately 12 months after separation). In the O2O 12-month follow-up, the same response choices were available as described above. The better employment opportunity response option was recoded, dichotomized, and then merged with the Wave 3 TVMI variable change in employment.

Descriptive statistics of those who were matched see Table 16. After matching, there were no significant differences between the O2O participants in leaving their job for a better employment opportunity compared to the TVMI-matched sample who did not participate in employment programs.

Table 16*12-Month/Wave 3 Likelihood to Leave for a Better Employment Opportunity (Any O2O)*

	Intervention Group:	Comparison Group:
	O2O Program Use & 12-month Follow-Up Survey (n=303)	Wave 3 TVMI (No Employment Program Use & Not Working Full-Time) (n=303)
Age	38.19 (SD=8.17)	37.91 (SD=10.07)
Male (Gender)	78.2%	77.6%
Race/Ethnicity White Only NH	56.1%	55.4%
Black Only NH	18.2%	19.1%
Hispanic (Any Race)	12.9%	11.2%
Asian HPI, Other Race NH	14.9%	14.2%
Paygrade E1 to E3	0.3%	0.0%
E4	8.9%	7.9%
E5	13.2%	14.9%
E6	12.9%	12.9%
E7 to E9	23.7%	24.0%
O1 to O3	16.8%	19.1%
O4 to O7	18.2%	15.8%

Note. Among those who completed the 12-month survey, higher paygrades were more likely to participate in the O2O program: E7 to E9 were 11.7 times more likely; O1 to O3 were 5.8 times more likely, and; O4 to O7 were 8.3 times more likely to participate in the O2O program compared to E4 paygrades. O2O participants were also 53% more likely to have a master's degree or higher than have a bachelor's degree.

7. Conclusions

- Participants who started the O2O program (any O2O dose regardless of completing the program [i.e., intent-to-treat]) had significantly higher salaries than a matched TVMI sample who did not participate in employment programs.
- Participants who completed OTYC and OCW had a higher salary than a matched TVMI sample who did not participate in employment programs.
- Participants whose paygrade is E6 and lower and who completed OTYC and OCW intervention had significantly higher salaries than a matched TVMI sample who did not participate in employment programs.
- There were no significant differences in salary between the OCW-only intervention and a matched TVMI sample who did not participate in employment programs.
- There were no significant differences in salary between participants hired 45 days or more after eligibility to get hired and who participated in the OTYC and OCW intervention and a matched TVMI sample who did not participate in employment programs.
- O2O participants who completed the 6-month follow-up were 2 times more likely to leave their job for a better employment opportunity than TVMI participants who

did not participate in employment programs. There were no significant differences for the 12-month follow-up.

Matching to a sample that did not utilize program components is essential for several reasons:

- Quasi-experimental designs can help determine if the program or its components are related to changes in specific outcomes. Without a comparison group, many programs remain ambiguous regarding their effectiveness.
- Identifies components that can spur innovation, lead to optimization or re-design of a program to utilize evidence-informed components, or can prompt the development of a new program or an implementation strategy using evidence-informed components; and
- Determines beneficial components for disseminating and implementing evidence-informed programming and can inform policy, education, and practice.

Thus, this report identified and summarized sample descriptive information from the O2O and TVMI samples used in the analyses. This report outlined the matching techniques' methodology, described the matched sample characteristics, and provided findings from the matched propensity analyses using data from O2O and TVMI. The selected design allows for more in-depth examination using O2O's program data and increases evaluation rigor by leveraging TVMI as a comparison group.

8. Recommendations

The O2O program design and extended resources align with components identified in TVMI as evidence-based components that are effective for achieving employment outcomes such as job attainment, retention, and promotion or higher salary. The goal of this report was to use O2O data and establish a robust matching process to the TVMI sample. The matched sample was not as robust as hoped. The process had some challenges due to differences in how questions were asked between the two data sets, changes in O2O's data collection over time, and lack of standardization in data collection to gather O2O outcome data internally and with their employment partners. IVMF is currently exploring strategies to improve its data collection as well as data collection with HHUSA. Due to the lack of robustness of the sample, a cost-benefit analysis examining the potential return-on-investment is not recommended at this time. Meetings with the O2O staff provided opportunities to discuss improvements in evaluation methodology. This section details current strengths and recommendations for the evaluation design and systematic data collection strategies and measures, which were also provided during our weekly discussions.

8.1. Strengths of the O2O Program

1. The components utilized in O2O and extended resources (i.e., certification certificates, HHUSA) are evidence-based through TVMI study analyses.
2. There are several in-depth questions about the utilization of the training (i.e., specific online coursework) that the larger TVMI study did not collect. O2O may want to consider conducting future analyses investigating how specific online training courses are related to program completion and passing of certifications.
3. The online training courses are extensive, and the availability of an advisor does appear to impact completion. O2O may want to consider identifying ways to expand this unique mode of delivery of the program.

8.2. Recommendations to Enhance Evaluation Design

1. O2O has continued to evolve; as such, evaluation should be ongoing as part of continuous quality improvement. Using matched samples (i.e., within O2O with waitlist control groups) with similar measures is a promising strategy for conducting evaluation and would allow for a more rigorous examination of outcomes for a cost-benefit analysis.
2. The current data collection has an enrollment survey, but no immediate post-test exists. Adding other outcomes to the evaluation could enable O2O to explore the implementation of the O2O training (e.g., satisfaction with materials, degree of difficulty, if the program met its stated goals, and intention to take certification examination).
3. In addition, expand the follow-up survey efforts to those who started the program but did not complete the program. A follow-up of this kind would allow O2O to systematically identify possible barriers to completion, satisfaction with the delivery materials, the degree of difficulty of the overall program and various training tracks, and a potential mismatch between time requirements and expectations.
4. Follow-up surveys administered at 6- and 12-month post-program completion were only delivered to participants who attained a job through a confirmed hired date. These efforts should be expanded to everyone who started the O2O program. In addition, the response rate for the two follow-up surveys is low; thus, securing resources for adding an incentive for participants to complete a more in-depth survey is strongly advised. Moreover, an in-depth examination of post-programs will enhance the likelihood of O2O's ability to assess the return-on-investment of the program to individuals, employers, and society. For example, robust positive outcomes related to retention or keeping people employed increase tax revenue and lower the need for public assistance, including healthcare. Employers may also experience reduced costs, and individuals may increase earnings over time.
5. Explore and add other employment outcomes (e.g., motivations for employment, job satisfaction, underemployment, work stress, flexibility).

8.3. Recommendations to Improve Measurement

1. At enrollment, ask individual's salary instead of or in addition to household income. This item would help ascertain starting salary, which was not available and would be a possible outcome to examine for those already working at O2O enrollment.
2. Salary information was updated through LinkedIn or HHUSA sources. Salary could include wages in addition to a variety of other resources (e.g., disability benefits, retirement income) as a self-report. Adding a standardized self-reported question to the intake and follow-up surveys to collect sources of income could be helpful. Adding longitudinal questions that include the date of collection for salary information would improve the ability to assess whether a change occurred and how soon.
3. Include questions in the 6-month follow-up survey that ask participants their goals for the program (i.e., seeking employment, seeking improved employment, improved technical competencies, meaningful employment). If including meaningful employment as a goal, ensure it has an operational definition (e.g., a sense of purpose, purpose in life, working to live/living to work). Add increased salary or benefits, flexible work schedule, and remote work as possible response options (see TVMI question in Appendix C as an example).
4. An item should be added to determine if an active-duty service member who notes working full-time is employed due to their military employment or has secured a civilian job. Incorporate items that assess employment status, including whether participants are looking for a job.
5. Include questions in the 6- and 12-month follow-up surveys about whether the veteran took a certification exam, and if so, did they pass the exam.
6. Include questions about goals for career and O2O participation (e.g., curiosity, to stay in the current job, to gain promotion at a current job, or to obtain a raise).
7. Identify a more systematic method of gathering terminal leave date or separation date if the exact day is unknown. For example, instead of using 1/1/1900 for those that do not know their separation date, the item could include an "I do not know at this time" response option or ask for "month" and "year" separately to provide a more accurate estimate for those that do not know an exact date.
8. Incorporate additional measures to explain why veterans are not looking for work or finding a job. Adding a question to understand how the industry pathway chosen is related to military occupation is an additional explanation (see TVMI question in Appendix D for an example).

References

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Appendix A

Specific TVMI Questions

In this section, you will be asked about your work experiences.

Work What is your current work status?

- Working for pay (1) – //ASK WORKHRS
- Not working for pay but actively looking for paid work (2)
- Not working for pay and not looking for paid work (0)

WorkHrs In a typical week how many hours do you work? _____ hours (range 0-120)

//ASK IF WORKHRS IS 30 OR LESS//

Are you currently looking for full-time employment?

- Yes (1)
- No (0)

//ASK IF WORK=2 OR BLANK//

NotWork What is the main reason you have not been working for pay?

- Have not been able to find a job (1)
- Laid off from my previous job (2)
- Fired from my previous job (3)
- Quit my previous job (4)
- Was unable to work due to medical problems (5)
- Was in school or other training program (6)
- Other reason (Please briefly describe) (7): _____

//ASK IF WORK=0 OR BLANK //

NotLookMain What is the main reason you are not looking for paid work? **ROTATE**

ANSWERS – single punch

- Unable to work because of an injury or illness (1)
- Unable to work because of an ongoing physical health condition or disability (2)
- Unable to work because of an ongoing mental/emotional condition or disability (3)
- Unable to find work (4)
- Retired from the workforce (5)
- Full-time homemaker and/or caregiver (6)
- In school/training (7)
- Not interested in paid employment (8)
- Other (describe: _____) (9)

//ASK IF WORK=1//

undremp Indicate how much you agree or disagree with each of the following statements.	Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
undremp1 Given my skills, I should be in a better job than my current job.	1	2	3	4	5
undremp2 Given my education, I should be in a better job than my current job.	1	2	3	4	5
undremp3 Given my leadership experience, I should be in a better job than my current job.	1	2	3	4	5
workfam1 The amount of time my work takes up makes it difficult to fulfill my family or personal responsibilities.	1	2	3	4	5
workfam2 Family-related strain interferes with my ability to perform job-related duties.	1	2	3	4	5

These questions were modified from the above questions but have not been evaluated yet. These questions are included in the Veterans Transition Assessment Tool (V-TAT), but the distribution and reliability need to be examined before recommending their use.

How much do you agree or disagree with the following statements?	Strongly Disagree (1)	Disagree (2)	Neither Strongly Disagree or Strongly Agree (3)	Agree (4)	Strongly Agree (5)
UNDEMP1 Given my formal <u>education</u> , I am overqualified for my present job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
UNDEMP2 Given my <u>work experience</u> , I am overqualified for my present job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
UNDEMP3 Given my current <u>salary</u> , I am underpaid.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

//ASK IF WORK=1//

workflex How much flexibility do you have in your work schedule to handle personal responsibilities or leisure activities?

- No flexibility at all (1)
- Hardly any flexibility (2)
- Some flexibility (3)
- A lot of flexibility (4)

//ASK IF WORK=1//

workstrain How often do you feel emotionally drained from your work?

- Never (1)
- A few times a year or less (2)
- Once a month or less (3)
- A few times a month (4)
- Once a week (5)
- A few times a week (6)
- Every day (7)

//ASK IF WORK=1//

workperform How would you compare your overall job performance on the days you worked during the past 4 weeks (28 days) with performance of most other workers who have a similar type of job?

- You were a lot worse than other co-workers (1)
- You were somewhat worse than other co-workers (2)
- You were a little worse than other co-workers (3)
- You were about average (4)
- You were a little better than other co-workers (5)
- You were somewhat better than other co-workers (6)
- You were a lot better than other co-workers (7)

//ASK ALL//

IncomeHH Please provide an estimate of your HOUSEHOLD'S yearly income before taxes are taken out. Include all sources of income, including salary, as well as any VA disability payments, real estate income, and any other sources of income from all earners in your household. If you do not have other sources of income and you are the only earner in your household, this may be the same as your salary. If you do not know the answer, please make your best guess.

- No salary (0)
- Less than \$15,000 per year (1)
- \$15,000 – 24,999 (2)
- \$25,000 – 34,999 (3)
- \$35,000 – 44,999 (4)
- \$45,000 - 54,999 (5)
- \$55,000 – 74,999 (6)
- \$75,000 – 99,999 (7)
- \$100,000 - \$149,999 (8)
- \$150,000 or more per year (9)

//ASK IF WORK=1 OR BLANK//

salary Please provide your expected annual salary (from working) before taxes are taken out. If you do not know the answer, please make your best guess.

- No salary (0)
- Less than \$15,000 per year (1)
- \$15,000 – 24,999 (2)
- \$25,000 – 34,999 (3)

- \$35,000 – 44,999 (4)
- \$45,000 - 54,999 (5)
- \$55,000 – 74,999 (6)
- \$75,000 – 99,999 (7)
- \$100,000 - \$149,999 (8)
- \$150,000 or more per year (9)

//ASK IF WORK=1 OR BLANK//

SalaryIncrease Over the past 6 months, how much did your annual salary change?

- \$1,501 or more decrease (-4) (1 for web prog) Please specify decrease \$ _____
- \$1,001-1,500 decrease (-3) (2 for web prog)
- \$501-1,000 decrease (-2) (3 for web prog)
- \$1-500 decrease (-1) (4 for web prog)
- No change (0) (5 for web prog)
- \$1-500 increase (1) (6 for web prog)
- \$501-1,000 increase (2) (7 for web prog)
- \$1,001-1,500 increase (3) (8 for web prog)
- \$1,501 or more increase (4) (9 for web prog) Please specify increase \$ _____

Employment Program Component Questions

This section asks about employment programs you have used over the last 3 months. You can list up to 2 programs per question. If you used more than 2 programs, list the additional programs in the last question of this section (“other programs not mentioned”). You can list the same program for more than one question.

The more detail you provide, the better. For example, listing "local employment office" is less helpful than listing the particular, such as "the resume writing workshop at Career OneSource San Diego South."

1. What program(s) have you used that offered an online job database, such as USAJobs, TA Online, or Indeed?

- Program 1 _____
- Program 2 _____
- I did not participate in any types of these programs (**EXCLUSIVE**)

2. What program(s) have you used offered a career fair, such as Veteran Recruiting Services or NCOA Career Expo?

- Program 1 _____
- Program 2 _____
- I did not participate in any types of these programs (**EXCLUSIVE**)

3. What program(s) have you used that assisted you with writing a resume or provided a military skills translator, such as Resume Engine or My Next Move for Veterans?

- Program 1 _____
- Program 2 _____
- I did not participate in any types of these programs (*EXCLUSIVE*)

4. What program(s) have you used that offered a job placement component, such as Hiring Our Heroes, VetJobs.com, or Hire Heroes USA?

- Program 1 _____
- Program 2 _____
- I did not participate in any types of these programs (*EXCLUSIVE*)

5. What program(s) have you used that offered a career counseling or mentoring component such as American Corporate Partners, Veteran Gold Card, or Veterans Business Outreach Program?

- Program 1 _____
- Program 2 _____
- I did not participate in any types of these programs (*EXCLUSIVE*)

6. What program(s) have you used that offered a training or certification component, such as Vet Success, FastTrac for Veteran Entrepreneurs, or ProjectReturn2Work?

- Program 1 _____
- Program 2 _____
- I did not participate in any types of these programs (*EXCLUSIVE*)

7. What other employment-related program(s) have you used that you have not mentioned previously?

- Program 1 _____
- Program 2 _____
- I did not participate in any other employment-related programs (*EXCLUSIVE*)

Appendix B

O2O Variables

Demographics:

- Age at time of enrollment
- Gender
- Race
- Pre-program employment status
- Highest level of education

Military Characteristics:

- Military connection
- Branch of service
- Pay grade
- Date of separation
- Total years of service

Program Participation Characteristics:

- Online vs. Installation model
- Location of participation (State)
- Cohort start date
- Course name
- Course track (high-level grouping of courses – Project Management, IT, etc.)
- Learning Management System (i.e., the platform to access the content)
- Cohort status (closed / in-progress)
- Referred for employment services with HHUSA (y/n)

Output / Outcome Information:

- OTYC complete (y/n)
- Course complete (y/n)
- IVMF paid for their cert exam (y/n)
- Entered higher ed post-program (y/n)
- Hire (y/n)
- Date of hire
- Salary

Appendix C

Logistic Regression Before Matching – Outcome O2O with Different Select Samples

Five logistic regression analyses were conducted after selecting the inclusion criteria: intent-to-treat, OTYC and OCW, E6 and lower paygrades, only OCW, and 45 days after the eligibility date. Predicted probabilities were tested before and after matching. In general, similar differences between the O2O-selected sample and TVMI sample. The results are the likelihood of participation in the O2O program. The specific estimates vary depending on the selected sample.

For the intent-to-treat analysis, male veterans were 61% more likely to participate in O2O than female participants. Black NH veterans were 2.3 times more likely to participate in the O2O program than White NH participants. Asian, other, and more than one race were two times more likely to participate in the O2O program compared to White NH participants.

E1 to E3 paygrades were 75% less likely to participate in the O2O program than participants who were E4 paygrade. Higher paygrades were more likely to participate in the O2O program than participants who were E4 paygrade. Navy Veterans were less likely to participate in the O2O program compared to Army participants. National Guard/Reserve were less likely to participate in O2O than Army participants.

Table 17. Logistic Regression Before Matching – Outcome O2O with Different Select Samples

	Intent-to-Treat Table 9 Before Matching Odd Ratio ([CI])	OTYC & OCW Table 10 Before Matching Odd Ratio ([CI])	E6 and Lower Paygrade OTYC & OCW Table 11 Before Matching Odd Ratio ([CI])
Age Start of PE	0.99 [0.96, 1.01]	0.99 [0.96, 1.02]	0.98 [0.94, 1.02]
Male	1.61 [1.14, 2.27]**	1.68 [1.16, 2.43]**	1.03 [0.62, 1.72]
Race/Ethnicity White NH	Reference Group	Reference Group	Reference Group
Black NH	2.32 [1.58, 3.39]***	2.49 [1.66, 3.74]***	3.32 [2.00, 5.52]***
Hispanic	1.14 [0.78, 1.66]	1.16 [0.77, 1.74]	0.99 [0.60, 1.63]
Asian, Other Race, > 1 Race NH	2.05 [1.35, 3.11]**	2.00 [1.28, 3.13]**	3.02 [1.70, 5.37]***
Paygrade E1 to E3	0.25 [0.12, 0.52]***	0.24 [0.10, 0.56]**	0.25 [0.10, 0.58]**
E4	Reference Group	Reference Group	Reference Group
E5	2.14 [1.43, 3.19]***	1.77 [1.14, 2.75]*	2.02 [1.27, 3.20]**
E6	3.17 [1.85, 5.42]***	2.55 [1.44, 4.54]**	2.98 [1.53, 5.77]**
E7 to E9	9.38 [4.99, 17.66]***	8.19 [4.18, 16.05]***	Omitted
W1 to W5	16.43 [3.63, 74.28]***	13.21 [2.85, 61.13]**	Omitted
O1 to O3	3.04 [1.71, 5.40]***	2.29 [1.24, 4.24]**	Omitted
O4 to O7	3.68 [1.71, 7.92]**	2.98 [1.31, 6.76]**	Omitted
Army	Reference Group	Reference Group	Reference Group
Navy	0.68 [0.48, 0.95]*	0.68 [0.47, 0.98]*	0.60 [0.37, 0.97]*
Air Force	0.21 [0.14, 0.31]	0.17 [0.11, 0.26]***	0.15 [0.08, 0.30]***
Marines	0.71 [0.48, 1.06]	0.59 [0.38, 0.91]*	0.48 [0.28, 0.83]**
National Guard/Reserve	0.21 [0.13, 0.34]***	0.15 [0.09, 0.26]***	0.09 [0.04, 0.21]***
Highest Education High School	0.08 [0.05, 0.13]***	0.07 [0.04, 0.13]***	0.10 [0.05, 0.19]***
Some College	0.26 [0.17, 0.41]***	0.28 [0.18, 0.44]***	0.35 [0.20, 0.62]***
Associates Degree	0.35 [0.21, 0.57]***	0.31 [0.18, 0.53]***	0.39 [0.20, 0.75]**
Bachelor’s Degree	Reference Group	Reference Group	Reference Group
Master’s Degree or higher	0.99 [0.96, 1.01]	0.99 [0.96, 1.02]	2.00 [0.52, 7.61]

Table 17. Continued Logistic Regression Before Matching – Outcome O2O with Different Select Samples

	Only OCV Table 12 Before Matching	45 Days After Eligibility Table 13 Before Matching
Age Start of PE	0.97 [0.94, 1.00]	0.98 [0.96, 1.01]
Male	2.84 [1.74, 4.64]***	1.58 [1.07, 2.35]*
Race/Ethnicity White NH	Reference Group	Reference Group
Black NH	2.04 [1.21, 3.42]**	2.74 [1.77, 4.24]***
Hispanic	1.08 [0.61, 1.90]	1.35 [0.87, 2.09]
Asian, Other Race, > 1 Race NH	2.23 [1.25, 3.95]**	1.83 [1.13, 2.96]*
Paygrade E1 to E3	0.27 [0.03, 2.15]	0.32 [0.13, 0.79]*
E4	Reference Group	Reference Group
E5	2.51 [1.21, 5.24]*	1.38 [0.85, 2.26]
E6	5.91 [2.58, 13.53]***	1.95 [1.04, 3.67]*
E7 to E9	16.04 [6.64, 38.75]***	7.86 [3.80, 16.24]***
W1 to W5	24.05 [4.22, 137.15]***	9.10 [1.89, 43.92]**
O1 to O3	4.79 [2.20, 10.42]***	1.76 [0.92, 3.39]
O4 to O7	6.91 [2.57, 18.58]***	2.80 [1.18, 6.63]*
Army	Reference Group	Reference Group
Navy	0.69 [0.43, 1.11]	0.78 [0.53, 1.16]
Air Force	0.36 [0.22, 0.60]***	0.20 [0.12, 0.31]***
Marines	0.60 [0.30, 1.19]	0.75 [0.47, 1.20]
National Guard/Reserve	0.36 [0.19, 0.69]**	0.19 [0.11, 0.34]***
Highest Education High School	0.05 [0.02, 0.12]***	0.05 [0.03, 0.10]***
Some College	0.10 [0.06, 0.19]***	0.23 [0.14, 0.37]***
Associates Degree	0.22 [0.11, 0.41]***	0.30 [0.17, 0.52]***
Bachelor's Degree	Reference Group	Reference Group
Master's Degree or Higher	1.18 [0.68, 2.04]	0.89 [0.53, 1.52]

Appendix D

TVMI Data: Not Looking for Paid Work

TVMI data collection included the following response options for work status.

What is your current work status?

- Working for pay (1) – (excluded from analysis)
- Not working for pay but actively looking for paid work (58%)
- Not working for pay and not looking for paid work (41.9%)

Both were included in the O2O matching since we do not know who in the O2O sample was not looking for paid work. TVMI follow-up questions asked participants why they were not looking for paid work. The highest percentage included: full-time homemakers and/or caregivers. 42% are male veterans. See the figure below for a breakdown of the reasons for not looking for paid work.

Figure 15

Reasons Not Looking for Paid Work

