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COMMUNITY STABILIZATION PROGRAM (CSP) VOCATIONAL EDUCATION AND APPRENTICESHIP STUDY

FINAL REPORT

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MEPP II COMMUNITY STABILIZATION PROGRAM (CSP) VOCATIONAL EDUCATION AND APPRENTICESHIP STUDY

FINAL REPORT



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CSP Project Summary

International Relief and Development (IRD) were awarded a Cooperative Agreement (267-A-00-06-00503-00) to implement the Community Stabilization Program (CSP) on 29 May 2006. The Request for Assistance (RFA) indicated that USAID intended to provide up to \$1.32 billion over a period of 28 months with the estimated completion for the Cooperative Agreement given as September 30, 2008. The initial Cooperative Agreement gives the total estimated amount as \$265 million with an initial obligation of \$30 million. Modification 06 to the cooperative agreement on August 2007 increased the total estimated amount to \$544 million of which \$340 million had been obligated. The same modification extended the project to September 30, 2009. Additional modifications increased the obligated amount to \$644 million.

List of Acronyms

AoR	Area of Responsibility
AOTR	Agreement Officer Technical Representative
BOQ	Bill of Quantity
CERP	Commander's Emergency Relief Program
CFSVA	Comprehensive Food Security and Vulnerability Analysis 2008
COIN	Counter Insurgency
COP	Chief of Party
COTR	Contracting Officer's Technical Representative
CSO	Civil Society Organization
CSP	Community Stabilization Program
DAC	District Advisory Council
EOP	End of Project or Program
FSO	Focused Stabilization Office
FY	Fiscal Year
GOI	Government of Iraq
HQ	Headquarters
IIACSS	Independent Institute for Administrative and Civil Society Studies
IBTCI	International Business & Technical Consultants, Inc.
IHSES	Iraq Household Socio-economic Survey
IR	Intermediate Result
LG	Local Government
LGP	Local Governance Program
LOP	Life of Project or Program
M&E	Monitoring and Evaluation
MEPP II	Monitoring and Evaluation Performance Program, Phase II
MOLSA	Ministry of Labor and Social Affairs
MOU	Memorandum of Understanding
MSME	Micro, Small or Medium Enterprise
NGO	Non-Governmental Organization
OJT	On-the-job Training
PMP	Performance Management Plan
PC	Provincial Council
PRT	Provincial Reconstruction Team
Q	Quarter
RF	Results Framework
RFA	Request for Application
RIG	Regional Inspector General
SME	Small or Medium Enterprise
SO	Strategic Objective
SOW	Scope of Work
SPSS	SPSS predictive analytics software www.spss.com
US	United States
USAID	United States Agency for International Development
USG	United States Government
USM	United States Military
VTC	Vocational Training Center
WB	World Bank

EXECUTIVE SUMMARY

The Community Stabilization Program (CSP) is USAID's largest cooperative agreement worldwide with a current funding level of \$644 million during the life of this three-year project. The CSP is implemented by International Relief & Development (IRD) who was awarded the project in May 2006. Strategically, the CSP project is responsible for achieving the mission objective stated in USAID/Iraq's mission strategy statement of November 2005 ("The USAID/Iraq Transition Strategic Plan 2006-2008") and found in the Mission's final results framework (RF) in the August 23, 2006 revision to the Mission Program Management Plan (PMP). CSP supports USAID/Iraq's Strategic Objective 7 (SO 7), Focused Stabilization: reduce the incentives for participation in violent conflict, and Intermediate Results (IR) 7.1 (Unemployment decreased with a focus on young men); 7.2 (Conflict mitigated through increased civil society organization and community activities); and 7.3 (Community infrastructure revitalized and essential services provided by local government).

This study focuses on IR 7.1 and quantitatively measures the overall effectiveness of the vocational training program by determining the employment status of the over 14,919 Iraqis that graduated from CSP sponsored programs after December 31, 2007. However, the primary measure of success for CSP has been whether or not it has had a COIN impact through engaging as many participants as possible to get them off the streets in the short-term, thus reducing their vulnerability to be recruited as insurgents. This study looks beyond the short-term outputs of the COIN strategy to the longer term outcomes (results) of CSP's training for work programs. Outcomes assessed in this study include employment status percentage, whether graduates are employed in their area of study; if they are earning a living wage; and if the apprenticeship program was instrumental in helping graduates obtain long term employment in their field of study.

The USAID/Iraq Focused Stabilization Office (FSO) and the Program Office jointly developed a scope of work (SOW) under which IBTCI, the implementing contractor for the Monitoring and Evaluation Performance Program, Phase II (MEPP II), would conduct this special study answering the questions posed by the SOW. Following mission procedures, IBTCI was assigned this task by its Contracting Officer Technical Representative (COTR) in July 2008 after which deliberations began with the CSP and their AOTR. These deliberations sought to clarify any misunderstandings and to coordinate the field work. For reasons explained in the study three pretests of the methodology led to a final March 12, 2009 revision to the SOW.

Questions posed in the SOW and answered by this special study are:

1. For graduates completing vocational training after January 1, 2008 and before December 31, 2008, what is the employment rate for these graduates?

- What percent of graduates are currently employed in the area of their study? If so, how many months of employment since graduation? What percentage are employed, but outside their area of study? What percentage is under-employed (employed but in unskilled labor)?
- If employed in their area of study, does the graduate earn a living wage?
- Do you believe the training helped you earn a living? Did the training enhance your life or contribute in a meaningful way to earning a living?

- Does the graduate realize any income from the skills learned in the vocational training? How relevant was the training to the needed skills for area of study? Did the training contribute in a meaningful way to earning a living?

2. For apprenticeships completed after March 31, 2008 and before December 31, 2008, what percentage of apprenticeships have lead to employment?

- Do apprenticeship graduates enjoy a higher employment rate when compared with other VTC graduates?
- Did the apprenticeships improve their employability? Did the job after the apprenticeship result in earning a living wage?
- Are the apprentices employed outside their area?
- Is the apprentice still employed by the business that conducted the apprenticeship?
- Did the apprenticeship result in earning a living wage?
- Does the former apprentice believe the apprenticeship enhance their overall employability?
- Did the apprentice receive the 50% matching salary provided by IRD? Did the apprentice receive a salary from the employer amounting to at least the 50% matching rate?

To answer these questions random samples of apprentices and vocational education graduates were drawn from separate datasets extracted from individual databases operated by IRD's CSP regional offices. The study target population is defined by the dates of interest noted in the questions above. The dataset for vocational education graduates contains only those individuals who completed vocational training after January 1, 2008 that did not go on to do an apprenticeship. The dataset of apprentices contains individuals who entered an apprenticeship after March 31, 2008. These two datasets are mutually exclusive and define the population of interest for this study.

Sample size was calculated with consideration for the proposed method of analysis, and estimated non-response. Non-response estimates were informed by three pretests conducted from late September 2008 until February 2009. Very high levels of non-response found during the first two pretests resulted in an investigation into its causes and a re-design of the study. The third pretest using revised retrospective dates obtained satisfactory response rates for apprentices and marginally acceptable response rates for VTC graduates. Based on a third pretest a full study was fielded on March 25, 2009. The study sampled 400 respondents comprised of 150 apprentices and 250 vocational education graduates. The higher number of sampled vocational education graduates was a precaution against anticipated low VTC graduate response rates.

IBTCI's sub-contractor the Independent Institute for Administration & Civil Society Studies (IIACSS) fielded the sample survey concluding the fieldwork on 26 April. Final survey response exceeded expectations: apprentice response was 75% while vocational education graduate response was 82%. IIACSS concluded data entry on 28 April. Survey data were merged with CSP dataset information prior to the analysis. This allowed survey data to be compared with CSP administrative data.

Analysis of the data was done by IBTCI using SPSS 17.0 and Excel 2007. IBTCI's data analysis included logistic regression to highlight statistical differences in work experience between apprentices and vocational education graduates. Some follow-up work is continuing to verify the payment of apprentice stipends.

Findings

VTC graduates.

- Forty-six percent of VTC graduates said that they were earning money for work that they did in the past 7 days.
- On average employed VTC graduates worked for 8 months since the end of their training.
- Eighty-six percent of employed VTC graduates work in their area of study.
- Fourteen percent of employed VTC graduates were working outside their area of study.
- Underemployment due to work as unskilled labor was not indicated by the survey. Underemployment due to reduced hours of employment did occur. Thirty percent of employed VTC graduates worked 30 hours or less during the seven days that preceded the survey.
- There was a strong belief expressed that training helped graduates earn a living wage. This was expressed even by those who were not employed.
- Training enhanced the VTC graduates life and contributed in a meaningful way to earning a living. This is demonstrated by the high rate of employment in their area of training.
- VTC graduates did realize income from the skills they learned. Caveats are that some of them were already working in the area of their skill before they joined the VTC.
- Virtually all respondents (95%) said that the training was worthwhile and provided them with the useful skills.
- The study found that VTC graduates did receive the stipend amounts due to them.

Apprenticeships

- Twenty-nine per cent of apprentices said that they were earning money for work that they did in the past 7 days.
- Job duration for apprentices is shorter than for VTC graduates: 6.8 months compared to 8.2 for VTC graduates.

- Apprentices have a lower employment rate than that for VTC graduates. This finding is contrary to expectations. This can partially be due to the longer average period that VTC graduates have been in the job market (10 months) than have Apprentices (7 months on average).
- There is no evidence to support the proposition that apprentices are more employable than VTC graduates.
- An estimated 70% of employed apprentices earned a “living wage.” Thirty percent fell below the 70,000 ID per capita per month “living wage” threshold.
- The earning power of apprentices on average surpassed that of the VTC graduates.
- Seventeen per cent of apprentices work outside their vocational specialty. No standard or benchmark has been established to assess if this is acceptable.
- Half of the employed apprentices still work for the business that hosted them as an apprentice.
- Despite the reality that most apprentices are not employed, 94% believed that the apprenticeship improved their overall prospects for employment.
- Did apprentices receive the 50% matching salary provided by IRD as well as the 50% matching amount provided by the host business? Thirty percent of apprentices apparently did not receive their full stipend amount.

Conclusions

This study has been difficult to implement. Three false starts resulted when sample design pretests failed to locate VTC graduates and apprentices. Clearly this was indicative of an underlying monitoring problem. The problem was recognized by IRD and remedial steps taken, at least in Baghdad. However, the remedy altered how the study was implemented and possibly the study result. Instead of reaching back one year or more to study VTC graduates and apprentices as intended, the study out of necessity looked at more recent examples that had limited employment histories. This may have lead to an underestimate of apprentice employment.

The study measured quantitatively the effectiveness of VTC training and apprenticeships in achieving employment. The study found that the overall employment rate was 40% leaving 60% unemployed. A recent nation-wide survey reports unemployment rates, for the same age groups of interest here, to be less than 25%.¹ Gauging the success of the program against this benchmark tells us that the results of the program are not encouraging.

¹ The “Iraq Household Socio-Economic Survey” IHSES- 2007, Tabulation Report, Central Organization for Statistics and Information Technology (COSIT), Kurdistan Region Statistics Organization, and the World Bank, page 289.

By interviewing only recent program participants; some only a few months after completing training or the apprenticeships a possibility exists that recent apprentices have had insufficient time to find employment (30% completed their apprenticeship 4 months ago or less). Even considering these adjustments the employment rates attributed to VTC training and apprenticeships are not impressive.

Eighty-six percent of those who are employed (i.e., 40% of the total respondents) are putting the skills they learned to use; it is unfortunate that more are not employed. We do not have a gauge for assessing whether this level of use of trained skills is acceptable. To expect a higher percentage suggests that the VTC is able to perfectly match training to the demand for skills. A majority of those who are employed say they are self-employed. This includes jobbers, running a small shop or business. From studies of the CSP business development program it is highly probable that these are small family run businesses where accounts are mixed with family accounts (informal businesses). Supporting these small businesses with a grant, or with business skills training was envisioned by the CSP, but was not tested here.

Participants said they were satisfied with the courses and their apprenticeships. Since they are paid to attend and participate it is unlikely to find many dissenters.

Average earnings made by VTC graduates are slightly below national averages (IHSES), or at least not above them. Calculated per capita incomes linked to the “living wage” benchmark show that many VTC graduates are struggling to keep enough food on the table. For those who are not employed the majority live from family contributions (as dependents of the larger family group).

Recommendations

1. CSP's management experience with the apprenticeship program in Baghdad reinforces the need for early deployment of monitoring and evaluation and Quality Assurance/Quality Control (QAQC) staff in identifying and validating program participants. There can be little doubt that initial beneficiary selection and oversight procedures were insufficient to prevent abuse as the tracking system was not robust enough to locate program participants to validate whether or not they had actually received payment or even existed. IRD's management remedy closed these loopholes as evidenced by MEPP II's ability to locate all of the sampled Baghdad participants in the final survey. That final management practice needs to be propagated to other vocational education and apprentice programs.
2. MEPP II experienced difficulty in working with the data provided to them by CSP. This difficulty stems from the independence of the units operating in the field. The M&E units collected information on program participants using different formats. The M&E database structure differs from one location to another: e.g. Kirkuk is different than Mosul which is different than Baghdad.
3. The CSP Rapid Programmatic Assessment Report, November 2007 by IBTCI recommended that CSP introduce an element of sustainability by targeting training-to-work graduates with BDP grants. The large percentage of employment coming from self-employment show how relevant this is. It was not apparent from this study whether

grants were made available to VTC graduates and apprentices.²

4. Review the inclusion of women in the VTC program. Women, based on economic activity rates, are over-represented in the training. All but seven of the 65 women interviewed did vocational education in sewing. Completion of the sewing course is awarded with a sewing machine. This is an attractive opportunity for any housewife. Is the program certain that these participants pose a threat of being caught up in the insurgency?
5. Set an employment rate benchmark for the vocational education program by using official government statistics as the guideline. The program should be able to meet or exceed known rates.
6. Investigate why women, especially in Baghdad, are apparently not receiving their full stipend amounts.

Lessons Learned

1. CSP oversight of the vocational education graduate and apprentice databases came late in the project cycle. When it did happen and the apprenticeship program was suspended the result was telling. Engage M&E and QAQC early in the program implementation to ensure proper program beneficiary selection.
2. Lack of database uniformity across program implementing units causes problems for overall program management.
3. Necessary revisions to the scope of work significantly reoriented the time frame of the analysis. This may have affected estimates of employment.
4. The VTC program did not set a benchmark for employment rates.

² IBTCI (2007), Community Stabilization Program Rapid Programmatic Assessment, November 2007, page 11, "The BDP program introduces an element of sustainability into the CSP. The BDP is intended to support grantees that have been identified through other, short-term activities. It was assumed that many of the training-to-work graduates would be likely candidates for BDP grants. Program documentation does not reveal that graduates become BDP grantees. As with job placement this is a logical conclusion for some graduates of the training-for-work program."

MEPP II CSP VOCATIONAL EDUCATION AND APPRENTICESHIP SPECIAL STUDY

I. INTRODUCTION

The United States is committed to the future success of Iraq. Within USAID/Iraq's Transition Strategic Plan 2006-2008, the first of four strategies delineated is "Focused Stabilization: Reduce the incentives for participation in violent conflict." To help plan and manage the process of assessing and reporting progress towards achieving its strategic objectives, USAID/Iraq (hereinafter the "Mission") made final its Performance Management Plan (PMP) in August 2006. In the PMP document, consistent with earlier Mission objectives, the strategy to reduce the incentives for participation in violent conflict is identified as Strategic Objective 7 (SO 7). Under SO 7, the NGO International Relief and Development (IRD) was contracted to implement the Mission's focused stabilization strategy under the Community Stabilization Program (CSP).

CSP contributes to the achievement of results under the Mission's counter-insurgency (COIN) goals through USAID/Iraq's Strategic Objective 7 of the Mission's strategic framework. The program has four broad components: 1) short-term employment through the Community Infrastructure and Essential Services; 2) training and employment placement through Vocational Training and Apprenticeship; 3) sustainable job creation through the Business Development Program (BDP); and 4) youth engagement on life skills and conflict mitigation through sports, cultural events and public service campaigns.

Through this study, the Focused Stabilization Office (FSO) seeks to measure the results of CSP's Vocational Training and Apprenticeship component and establish its success in supporting the Mission's COIN goals through Strategic Objective 7. The agreement officer technical representative (AOTR) for the CSP in USAID/Iraq's FSO determined that a special study was needed "...to quantitatively measure the overall effectiveness of the vocational training program by determining the employment status of the over 14,919 Iraqis that graduated from CSP sponsored programs after December 31, 2007. However, the primary measure of success for CSP has been whether or not it has had a COIN impact through engaging as many participants as possible to get them off the streets in the short-term, thus reducing their vulnerability to be recruited as insurgents. This study looks beyond the short-term outputs of the COIN strategy to the longer term outcomes (results) of CSP's training for work programs. Outcomes assessed in this study include employment status percentage, whether graduates are employed in their area of study; if they are earning a living wage; and if the apprenticeship program was instrumental in helping graduates obtain long term employment in their field of study.

The CSP The project has begun to wind down as it approaches its September 30, 2009 end date and Mission strategy shifts from COIN programs to more traditional development programs.

International Business & Technical Consultants, Inc. (IBTCI) implements the USAID funded Monitoring and Evaluation Performance Program, Phase II (MEPP II). IBTCI receives instructions through its COTR to conduct monitoring and evaluation of partner programs, review partner PMPs or to conduct special studies such as this one. Under MEPP II, IBTCI was asked to undertake this study on behalf of the FSO. IBTCI is committed to providing evidence-based findings that are useful for gauging program performance and management decision making.

Under MEPP II, IBTCI is tasked to provide field monitors to assist USAID to monitor projects it cannot otherwise reach. MEPP II has a long-standing relationship with a local partner to provide

field monitoring services. The Independent Institute for Administration & Civil Society Studies (IIACSS) provides field monitors who respond to needs as they arise across Iraq. Field work referred to in this study has been implemented by IIACSS under the guidance of IBTCI through a purchase order agreement.

II. USAID'S COMMUNITY STABILIZATION PROGRAM

CSP is USAID's largest cooperative agreement worldwide with overall funding of \$644 million during the life of this three-year project. The CSP is implemented by International Relief & Development (IRD) who was awarded the project in May 2006. Since May 2006, USAID has been implementing CSP, a multi-faceted program designed to reduce the incentives for participation in violent conflict by developing and implementing activities that support the social and economic stabilization of Iraqi communities. The program is a non-traditional program for USAID in the sense that rather than focusing on long-term developmental impact, the program focused on short-term results in support of the broader United States Government Strategy in Iraq. The program was targeted at engaging unemployed youths who were the most vulnerable to overtures from violent elements of Iraqi society. Initial funding under the CSP award limited activities to areas of significant insurgent activity in Baghdad. Later, the AoRs for CSP were expanded to cover similar areas in Kirkuk, Mosul/Tel Afar, Ramadi, Falluja, North Babil, Tikrit, Beiji and Diyala.

III. THE PROBLEM STATEMENT

Unemployed youth are recruited to the insurgency because they do not have other opportunities for earning their livelihood.

IV. THE DEVELOPMENT HYPOTHESIS

The Iraq Transition Strategy Statement of November 2005 notes that "USG objectives cannot be accomplished through security interventions alone. The USAID strategy provides a focused approach for addressing the non-security issues of governance and market led growth. It is important to increase resources for these two vital areas which, in the short-term, will stabilize areas impacted by the insurgency and mitigate the appeal of insurgent recruitment efforts..." Annex II provides the full development hypothesis for SO 7 as it appears in the Mission Strategy statement.

In brief the concept is to focus on communities severely affected by insurgent action by "stabilizing" them. The Transition Strategy Statement goes on to imply that specific activities undertaken will achieve the desired stability leading up to a transition to more traditional development programs. "USAID will focus on employment generation, infrastructure rehabilitation, youth programs, assistance to municipal governments and conflict mitigation" in the cities targeted as being in the strategic USG interest. It is presumed that following the achievement of stability, these "cities will be integrated into USAID's longer-term development initiatives in health and education, agriculture, micro-credit and building the capacity of communities and civil society organizations for advocacy, and the capacity of local government to provide basic services."

V. CSP PROJECT DESIGN

The CSP was implemented as a key element to transition Iraq into a stable, democratic and prosperous state. As defined in the RFA the purpose of CSP is to complement military security efforts, and civilian local government development, with economic and social stabilization efforts.

The design of the CSP project includes: 1) creation of jobs and development of employable skills with a focus on unemployed youth; 2) revitalization of community infrastructure and essential services; 3) support for established businesses and development of new sustainable businesses; and 4) help to mitigate conflict in selected communities. By carrying out these activities the CSP was expected to achieve measurable progress towards achieving the strategic objective. The CSP PMP provided performance indicators approved by the AOTR that were to provide evidence that strategic objectives were being achieved. The indicators identified and approved for the PMP (# of participants completing vocational skills training and # of apprentices placed) were inadequate to gauge whether training and apprenticeships actually resulted in sought after employment, hence the need for this special study.

VI. PURPOSE OF THE VOCATIONAL EDUCATION AND APPRENTICESHIP SPECIAL STUDY

This special study is directed at the “the creation of jobs and development of employable skills with a focus on unemployed youth” made available through the vocational technical education program and related apprenticeships. This aspect of the program is abbreviated as Votech. In conjunction with the Ministry of Labor and Social Affairs (MOLSA) the CSP recruited unemployed youth within their area of responsibility (AoR) to join the Votech program. Once Votech graduation was complete some of those trained qualified for an apprenticeship program in the field of their training. The CSP program funded the Votech training and half of the cost of the apprenticeship. This special study seeks to validate whether employment was achieved and whether employment was achieved in the area of study. Annex III is a full description of the Vocational Education and Apprenticeship Program as it appears in the latest agreement modification from September, 2008.

Specific questions posed in the SOW (provided in full in Annex I) are listed below:

1. For graduates completing vocational training after January 1, 2008 and before December 31, 2008, what is the employment rate for these graduates?

- What percent of graduates are currently employed in the area of their study? If so, how many months of employment since graduation? What percentage are employed, but outside their area of study? What percentage is under-employed (employed but in unskilled labor)?
- If employed in their area of study, does the graduate earn a living wage?
- Do you believe the training helped you earn a living? Did the training enhance your life or contribute in a meaningful way to earning a living?
- Does the graduate realize any income from the skills learned in the vocational training? How relevant was the training to the needed skills for area of study? Did the training contribute in a meaningful way to earning a living?

2. For apprenticeships completed after March 31, 2008 and before December 31, 2008, what percentage of apprenticeships have lead to employment?

- Do apprenticeship graduates enjoy a higher employment rate when compared with other VTC graduates?
- Did the apprenticeships improve their employability? Did the job after the apprenticeship result in earning a living wage?
- Are the apprentices employed outside their area?
- Is the apprentice still employed by the business that conducted the apprenticeship?
- Did the apprenticeship result in earning a living wage?
- Does the former apprentice believe the apprenticeship enhance their overall employability?
- Did the apprentice receive the 50% matching salary provided by IRD? Did the apprentice receive a salary from the employer amounting to at least the 50% matching rate?

VIII. RESEARCH DESIGN AND STUDY METHODOLOGY

The special study research design ensures within the limits of time and resources that the questions posed above have a high probability of being answered with a statistically valid response. Providing valid evidence for decision making entails 1) understanding how the questions can be answered (what information are we looking for), 2) finding the best sources of evidence to answer the questions, and 3) appraising the quality and validity of the evidence, while proposing a statistical model that provides the best chance of achieving answers that are statistically significant.

Sources of information to answer the questions.

The IRD CSP program keeps database(s) of vocational education graduates and apprentices.³ Answering the SOW questions implies either using existing data on program participants, or interviewing participants to obtain what's needed. The study uses both existing data and survey data. The IRD CSP databases are at the core of the study and are used for their content as well as being the basis for selecting a sample of participants that will be interviewed.

How the SOW questions are answered.

Apprentices are to be compared with vocational education graduates who did not go on to do an apprenticeship. Employment rate comparisons between the two are estimated. Within these two groups (apprentices and vocational education graduates) we propose to look at whether they are employed using the skills learned, their sources of earnings, and if they earn a living wage. A simple logistic regression equation was formulated to predict employment (the

³ Each CSP region keeps a slightly different version of these data making it difficult to create a single national database.

dependent variable). The independent variable identified the respondent as a VTC graduate or an apprentice. Standard statistical tests (the Wald statistic) demonstrated that employment rates for VTC graduates and Apprentices are statistically different.

Overall employment for VTC and Apprentice program beneficiaries can be compared to known national employment rates for youth of a similar age taken from the Iraq Household Socio-Economic Survey 2007.

Ensuring the quality of evidence provided.

For statistical precision and accuracy the study design defines a “control group” and a “treatment group” drawn from the homogeneous population of all youth sponsored under CSP who completed a vocational education training program.⁴ Preliminary screening from the IRD databases selected vocational education graduates and apprenticeships initiated within the reference period of interest (after March 31, 2008 and before December 31 for apprentices, and after January 1, 2008 and before December 31, 2008 for vocational education graduates). The selected apprentices and vocational education graduates were placed in separate data files that became the sample frames from which group members were selected at random.⁵

Before random samples were drawn from these files additional preparation of the sample frames was needed. The same person was likely to occur in the vocational education graduate file and the apprentice file (vocational education graduates went on to do apprenticeships). To achieve the intended study result vocational education graduates who then went on to become apprentices had to be removed from the vocational education graduate file. The two files were merged and then matched on name/address/telephone with the matching vocational education graduates then filtered out. After the merge and match only vocational education graduates who did not go on to an apprenticeship remained.⁶ The “treatment group” is drawn at random from the data file of apprentices (the apprenticeship is the “treatment”). The “control group” is drawn at random from those who did not do an apprenticeship.

Pretests

A questionnaire was designed and pre-tested. Three pretests of the questionnaire and the field monitor procedures were completed before the full sample could be implemented. Initial pretests found extremely low response rates for both vocational education graduates and apprentices. The rates were so low that a second pretest based on a new sample followed, but with a similar result. It was puzzling and discouraging that respondents could not be located. A meeting convened to review our understanding of the program and the database used to select the sample. Discussions unearthed that the Baghdad apprenticeship program had been suspended from October to December 2007 (the period of interest in the initial scope of work) and this was thought to be the source of the problem⁷.

⁴ A very small number of apprentices did apparently not complete vocational training under CSP.

⁵ These are separate Excel files that were converted to SPSS data files.

⁶ This is in fact a very elaborate matching and merging exercise simplified here for brevity.

⁷ The original SOW for this study set the target population for enquiry as vocational education graduates before September 1, 2007 and apprentices before March 1, 2008. In practice, and based on information from the CSP databases, we could not implement a viable sample of individuals in that time frame.

The CSP management decision to suspend had identified weak vetting procedures for apprentice selection and for the businesses that hosted them (Annex VII reports on why the apprentice program was suspended). During the period of program suspension contact information in the database had been updated and corrected. Unverifiable apprentices and businesses were removed from the program and the database. Pre-suspension data are of undetermined quality and were apparently the source of high non-response in Baghdad.⁸ The third pretest yielded dramatically better response rates for apprentices.⁹ Supported by the 3rd round pretest results and discussions with IRD and FSO, the SOW target population was revised to include only post-December 31, 2007 individuals. Based on these findings a full study was fielded in March 2009.

Revising the survey instrument.

Achieving the correct wording (in Arabic) for some of the questions was challenging. One question asked whether the respondent had been an apprentice. "Apprentice" needed a precise Arabic equivalent that referred clearly to the CSP program. Early attempts missed the mark. Identifying employment is crucial to this study. The pretests showed that employment rates were very low. For this reason, attention was given to ensuring that all forms of "earning a living" were captured, not just wages from formal employment. The concept of employment, while seemingly a basic concept, can be confusing to respondents. For some, employment meant that they had a wage earning job (usually with the government). Employment in this study includes self-employment and home-based enterprises. To avoid overstating unemployment a series of questions are asked that start with how respondents support themselves and earn their livelihood leading to questions that elaborate respondent's work history. Annex V shows the final survey instrument.

Determining the sample size needed.

The study objective is to determine whether or not there is a difference in employment rates between the two groups. In statistical language we are to accept or reject the null hypothesis that there is no difference in employment rates between the two groups. Standard statistical tests (analysis of variance and logistic regression) provide us with the tools to do this. How many participants do we need to interview before we can say conclusively that there is a difference in employment between the two groups? A by-product of the statistical test lets us determine the sample size needed to successfully measure differences between the groups provided we know something ahead of time about the two groups. Pretests provided the estimates of employment rates used to inform the calculation of sample size. Sample size was calculated with consideration for the proposed method of analysis (logistic regression), sample power, the desired precision of the estimates, and estimated non-response. A discussion of this is in Annex IV.

The overall sample size for this study is 400. Samples were selected proportional to city size in the sample frame. Two-hundred and fifty vocational education graduates and one-hundred and fifty apprentices were randomly chosen from their separate sample frames. A larger number of

⁸ Confirmed by the 3rd pretest results.

⁹ Response rate for apprentices was 87% while for vocational education graduates it was 57%.

vocational education graduates were selected to compensate for their predictably higher non-response rate (based on pretest information). Table 1 shows distribution of the sample by City and category.

Sample size by City and Category of Respondent.

City	Vocational education graduates	Apprentices	Total
Al Qaim	15	1	16
Baghdad	122	21	143
Basrah	10	15	25
Falluja	5	6	11
Hilla	19	20	39
Mosul	39	13	52
Tal Afar	6	16	22
Kirkuk	34	58	92
Total	250	150	400

Implementation of the Survey

IACSS field monitors were provided with a list of names of vocational education graduates and apprentices to be interviewed. The list was separated by city. In each city one or more field monitors under the guidance of a supervisor attempted to locate each individual on their list. In many cases the list included a physical address and mobile telephone number of the person to be interviewed. This was not uniformly the case and in some areas (Falluja, Tal Afar, and Hilla) additional research was needed to determine how to make contact with the interviewee (there were lower response rates in these areas). Security was a concern for both those being interviewed and the monitor; precautions were taken.

IACSS and its monitors gained valuable experience from the three pretests and were well prepared for the full survey. MEPP II worked with IACSS to clarify any remaining uncertainties in the questionnaire or field procedures before launching the survey on March 25. MEPP II asked monitors to revisit a respondent when uncertainties arose about certain responses. Collection of valid data calls for a rigorous implementation of the field survey and continuous oversight. The main steps followed in the process of achieving this sample survey are listed in Annex VI.

Response rates for the final survey were consistent or better than what was predicted from the pretests.¹⁰ One hundred thirteen of the 150 apprentices responded (75%), while two hundred and six vocational education graduates responded (82%). Field work stopped on 26 April.

¹⁰ Sample power was above .90 at this response rate

Data entry was completed on 28 April followed immediately by data validation. Validated data from the survey were merged with database information on the participants. Detailed analytical findings are consigned to Annex VIII with the results of the data analyses reported in the findings section below.

IX. FINDINGS

Findings are partitioned into four sections: preliminaries, low response rates, vocational education graduates and apprenticeships. Comparisons between apprentices and vocational education graduates appear in the apprenticeship section.

Preliminaries: “earning a living wage.”

Several of the questions in the scope of work refer to “earning a living wage.” Since this is not defined in the scope of work a definition is provided here. A recent (2007-2008) survey on income and expenditure (IHSES) and another on food security (CFSVA) in Iraq make available data that can be used to form a definition.¹¹ The IHSES calculated per capita income distributions nationally and by governorate. The CFSVA developed a wealth index that it correlated to food shortages. Notably, the CFSVA reported that for households in the lowest wealth index quintile, 56% experienced food shortages during the 30 days preceding their survey (see page 39 of the CFSVA). The wealth index is shown to be strongly correlated to income. Our own survey asks respondents for their earnings last month. These earnings figures are used to place the respondent in an IHSES income distribution group. Those with earnings in the IHSES two lowest income groups (approximately the lowest income quintile) are identified for this study as not earning a living wage (i.e., two lowest income groups estimate the lowest wealth index quintile). Essentially, it is likely that those in the lowest income groups will experience food shortages. The lowest quintile of per capital income has an upper limit of 70,000 ID per capita per month and this was set as the “living wage” benchmark. Respondents with reported per capita income below 70,000 ID were classified as not earning a “living wage.” Annex VIII has a more comprehensive explanation.

Low response rates

An important finding is the extremely low survey response rates during the first two pretests. In the early rounds of the pretests few of the randomly selected program participants were found. The unlikely chance of finding just 13 out of 40 apprentices during the first pretest, and only 8 out of 40 on the second pretest when these participants were selected from the IRD database portends a more serious problem. IIACSS monitors worked with both CSP staff and with MOLSA VTC officials to locate participants during these pretests, but this did not improve the result. It should not be difficult to locate apprentices since they are paid by CSP.

¹¹ The “Iraq Household Socio-Economic Survey” IHSES- 2007, Tabulation Report, Central Organization for Statistics and Information Technology (COSIT), Kurdistan Region Statistics Organization, and the World Bank; and the “Comprehensive Food Security and Vulnerability Analysis in Iraq”, 2008, Central Organization for Statistics and Information Technology (COSIT), Kurdistan Region Statistics Organization, Ministry of Planning Development Cooperation, Nutrition Research Institute, Ministry of Health, Iraq and the United Nations World Food Program.

This is an uncomfortable finding. What does it mean? It means that the CSP program would not have been able to locate participants had they wanted to cross check signatures on timesheets and payment records. Incomplete contact information in the database limited our monitor's ability to find the respondents; as it would also have done for CSP's QAQC staff. The problem was acknowledged by Baghdad CSP when they suspended the apprentice program (see Annex VII) and vetted the participants and their employers. A pretest done on apprentices randomly selected from this vetted database located all of the Baghdad participants instead of finding just 20-30% we found 100%.

It is more than a data quality issue. Incomplete addresses and telephone numbers on the database were initially ascribed to security concerns, but it can also mask more onerous possibilities. It doesn't sit well with the reality that apprentices and vocational education graduates were paid by CSP. While this problem was rectified in Baghdad, we did not find that a similar vetting of apprentices was carried out in other regional offices, and response rates in some areas remained low.

Characteristics of Apprentices and VTC graduates

Gender:

One-quarter of the surveyed participants were women. Fewer women than men went on to become apprentices.

Age:

All survey respondents were between 16 and 35 years old, the target group for the program. The median age was 24 meaning that one-half were less than 24 years old.

Persons dependent on the VTC graduate or apprentice:

The average household size for VTC graduate and apprentice households was eight persons. The number of household members reportedly dependent on the VTC graduate or apprentice averaged 5 persons. The number is less than the household size because many are single and unmarried while living in a larger household where they are not responsible for others.

Marital status:

Sixty percent of survey respondents were single having never married.

Education level:

Survey respondents were not well educated; more than 60% had not completed secondary school.

Identifying employment

Current employment status is the focus of this study. Precautions were taken in the design of the survey instrument to crosscheck employment status. This was done by first asking a generic question about the ways respondents supported themselves and their families since their VTC graduation. Question 1, Part III of the survey instrument asks for categorical responses aimed

at covering the range of possible ways of supporting yourself. The response categories divide respondents into those working to make money and those that aren't. A confirmatory question asked respondents who said they were not doing any kind of work to make money whether they were certain about this. If they did confirm this they were counted as having never been employed.

Using this definition 40% of those surveyed were working to make money. Employment rates are affected by the age and gender of the respondent. Economic activity rates for men and women vary significantly in Iraq. Women are much less likely to be in the labor force than are men. When men and women mature labor force participation increases. In the survey older men's employment rate rose to 70%, for younger men it remained below 35%. Younger men may decide to return to school, or to remain in a dependency status while they decide what to do next. In Iraq society women are less likely to be in the labor force and this shows up in lower survey based employment rates for women.

Reported employment came mainly through own-account self-employment (80% - 90%). Few found wage employment in a business or in the public sector.

Findings for VTC graduates

A. Employment rate for vocational education graduates.

The employment rate for VTC graduates who did not go on to become apprentices is reported here. Contrary to expectations based on pretests VTC graduates were more likely to be employed than were apprentices. Forty-six percent of VTC graduates said that they were earning money for work that they did in the past 7 days.

B. Months of employment since graduation.

Employed VTC graduates worked an average of eight months since the end of their training. For VTC graduates the end of training was after January 1, 2008 through December 31, 2008. The data indicated that some VTC graduates may have already been employed before they entered the training. For example, a self-employed plumber decided to take a vocational education course to improve skills in a trade he already knows something about. His self-employment could precede his entry into training. This occurred for a few of the respondents. Under Part II, Question 8, it was not uncommon for participants to say that they had improved skills in a field they already knew something about.

C. Percent of graduates currently employed in the area of their study.

Eighty-six percent of employed VTC graduates work in their area of study. This was determined through questions on employment history. Even though overall employment rates are low, those who did find work tended to find it the field of their vocational training. The unanswered question is whether training in other specialties might have given a better result in overall employment.

D. Percent employed, but outside their area of study.

Fourteen percent of employed VTC graduates were working outside their area of study.

E. Percent that are underemployed (employed but in unskilled labor).

Underemployment due to work as unskilled labor was not indicated by the survey. Underemployment due to reduced hours of employment did occur. Thirty percent of those employed worked 30 hours or less during the seven days that preceded the survey.¹²

F. Belief that training helped graduates earn a living wage.

Most respondents entered the program to improve skills or increase their chances for a job. These categorical findings are reinforced by open-ended explanations of the categorical response. Overwhelmingly the respondents thought that the skills learned were useful to the workplace. This is reinforced by the high percentage of those who found employment using the skill they learned.

G. Did the training enhance the graduates' life or contribute in a meaningful way to earning a living?

For the 85% of those who found employment in their area of study this is certainly true. For those who did not find employment, training has not yet demonstrated a contribution to a better life. Training program participants remained optimistic that the training was a good thing.

H. Do graduates realize any income from the skills learned in the vocational training?

Yes, graduates realize income from the skills they learned. Caveats are that some of them were already working in the area of their skill before they joined the VTC. Incomes were reported during the survey.

I. Relevancy of the training to the needed skills for area of study.

Virtually all respondents (95%) said that the training was worthwhile and provided them with useful skills. Five percent said the training did not provide skills useful in the marketplace.

Apprenticeships.

A. Employment rate for apprentices.

Twenty-nine per cent of apprentices were currently engaged in any type of work that earned money. The same procedure for identifying current employment was followed for apprentices as was done for VTC graduates. Apprentices have a lower employment rate than for VTC

¹² Working fewer than 6 hours per day is considered part-time work.

graduates. This finding is contrary to expectations. This can partially be due to the longer average period that VTC graduates have been in the job market (10 months) than have Apprentices (7 months on average). Job duration for apprentices is shorter than for VTC graduates: 6.8 months compared to 8.2 for VTC graduates. The original SOW proposed to look at apprenticeships and VTC graduates who completed their studies or apprenticeship one-year or more ago. For reasons explained above the SOW changed the dates of interest to a more recent episode that includes very recent VTC graduates and apprentices.

B. Comparing apprentice and VTC graduates employment rates.

We can say with confidence that VTC graduate employment rates are higher than apprentice employment rates. Logistic regression was used to reject the null hypothesis that employment rates for VTC graduates and apprentices might be statistically the same. At the 95% confidence level the null hypothesis was rejected.

C. Are apprentices more employable than VTC graduates.

There is no evidence to support the proposition that apprentices are more employable than VTC graduates.

D. Did the job after the apprenticeship result in earning a living wage?

An estimated 70% of employed apprentices earned a “living wage.” Thirty percent fell below the 70,000 ID per capita per month “living wage” threshold. The earning power of apprentices on average did surpass that of the VTC graduate. Average per capita monthly income for employed VTC graduates was a little less than 90,000 ID per month. For apprentices the estimated average was 164,000 ID.

E. Apprentice employment outside their area of study.

Seventeen per cent of apprentices work outside their vocational specialty. No standard or benchmark has been established to assess if this is acceptable. It would be surprising to find that all employment opportunities aligned with the vocational training received.

F. Apprentice employment with the business that hosted the apprenticeship.

Half of the employed apprentices still work for the business that hosted them as an apprentice. The survey numbers that estimate this finding are small providing limited confidence in this result. The finding expresses confidence in training program as the employer was willing to pick up the 50% wage difference formerly provided by a CSP stipend.

G. Former apprentice’s belief that the apprenticeship enhanced their employability.

Despite the reality that most apprentices are not employed 94% believed that the apprenticeship improved their overall prospects for employment.

H. Had apprentices received the 50% matching salary provided by IRD?

The study includes an assessment of the VTC stipend payments as well as the Apprentice stipend payments.¹³ To compare the VTC stipend, Part II, Question 9 asked respondents how much they were paid while they were in the vocational education program. This amount was compared to VTC stipend amounts provided by CSP. Stipend amounts were in US dollars converted to Iraqi Dinar (ID) using the exchange rate of 1000 ID = \$1.

Stipends to vocational education students are fixed at either \$75 (75,000 ID) or \$100 (100,000 ID) per month. A larger amount was paid to trainees in the construction trades. The stipend amount was subtracted from the reported VTC payment amount (collected from the respondent in Part II, Question 9). A positive difference indicated that payments received exceeded the stipend. Negative differences flagged discrepancies that needed to be looked at individually. Few negative differences were found and these ranged from the equivalent of \$5 to \$10 an amount easily attributable to exchange rate differences. It was concluded that vocational education trainees were paid the correct stipend amounts.

Stipends paid to apprentices are more complex. There is not a uniform stipend amount, but a variable amount depending on local market conditions. CSP provided a list of apprentice stipends by city and construction or non-construction trades. Fifty percent of that amount is reimbursed by CSP to the business owner. Payments to the business owner are done on a reimbursement basis only, supported by payment receipts and timesheets. The apprentice should receive the full amount unaware that 50% is paid by CSP to the business owner. We were informed to expect considerable variance within Baghdad in the amount of the stipend paid with differences from one area to another. A computer program allocated these referenced stipend amounts to the survey data. As before, the stipulated stipend amounts were subtracted from the amounts respondents said they received as an apprentice.

The analysis found that 30% (25 cases) of the apprentices reported receiving less than the stipulated apprentice stipend amount. The majority of these cases are in Baghdad. Further, if you are a woman apprentice it seems you are 5 to 6 times more likely to be paid less than your stipulated stipend amount. In our data this appears to be a systematic problem, and therefore troubling. To verify this finding we went back to CSP to validate the documented stipend amounts actually paid to the specific individuals identified as receiving less than the stipulated amount. Concurrently, the field monitors went back to the same respondents to confirm the amounts they said they were paid during the apprenticeship (Part IV, Question 15). There is still room for error and misunderstanding in how the numbers were reported, but these findings need an explanation.

I. Did the employer match the 50% salary paid by IRD?

This is the same assessment used for the CSP 50% payment amount above. Business owners hosting apprentices pay them directly the full amount due. Fifty percent of that amount is reimbursed by CSP to the business owner. Payments to the business owner are done on a reimbursement basis only, supported by payment receipts and timesheets. The apprentice should receive the full amount not necessarily aware that 50% is paid by CSP to the business owner.

¹³ Annex VIII provides details of the stipends paid.

X. CONCLUSIONS

The study has been difficult to implement. Three false starts resulted when sample design pretests failed to locate VTC graduates and apprentices. This too is a finding, but outside the intended focus of the SOW. In MEPP II's four-year experience in Iraq it has never encountered such low survey response rates (including locating IDP recipients of food and non-food distributions). Clearly this was indicative of an underlying management problem. The problem was recognized by IRD and remedial steps taken, at least in Baghdad. However, the remedy altered how the study was implemented and possibly the study result. Instead of reaching back one year or more to study VTC graduates and apprentices as intended, the study, out of necessity, looked at more recent examples that had limited employment histories. This may have lead to an underestimate of apprentice employment.

The study measured quantitatively the effectiveness of VTC training and apprenticeships in achieving employment. The study found that the overall employment rate was 40% leaving 60% unemployed. A recent nation-wide survey reports unemployment rates, for the same age groups of interest here, to be less than 25%.¹⁴ Gauging the success of the program against this benchmark tells us that the results of the program are not encouraging.

By interviewing only recent program participants; some only a few months after completing training or the apprenticeships, a possibility exists that recent apprentices have had insufficient time to find employment (30% completed their apprenticeship four months ago or less). Even considering these adjustments, the employment rates attributed to VTC training and apprenticeships are not impressive. The study could not address the issue of whether long-term employment had been generated because the sample was drawn from only the more recent VTC graduates and apprentices.

Official employment statistics measure the employment rate of persons who say they are in the labor force (persons who are actually looking for paid work, and not a student, retired person or a housewife). We can assume that everyone in the vocational education and apprentice program is in the labor force and looking for work, but this may not be the case. For example, the percent of women in the program (25%) exceeds the percent of women from the general population in the labor force (<20%). It is possible to conclude that some of the women join the program (vocational courses in sewing) to take advantage of a paid interlude that earns 75,000 ID per month and provides a sewing machine at the end, but have no intention of seeking employment. A similar argument can be made for some of the younger participants who may complete a vocational education course and then return to a student's status.

Eighty-six percent of those who are employed (i.e., 86% of the 40% of the total respondents who are employed) are putting the skills they learned to use; it is unfortunate that more are not employed. We do not have a gauge for assessing whether this level of use of trained skills is acceptable. To expect a higher percentage suggests that the VTC is able to perfectly match training to the demand for skills. A majority of those who are employed say they are self-employed. This includes jobbers, running a small shop or business. From studies of the CSP

¹⁴ The "Iraq Household Socio-Economic Survey" IHSES- 2007, Tabulation Report, Central Organization for Statistics and Information Technology (COSIT), Kurdistan Region Statistics Organization, and the World Bank, page 289.

business development program it is highly probable that these are small family run businesses where accounts are mixed with family accounts (informal businesses). Supporting these small businesses with a grant, or with business skills training was envisioned by the CSP program, but was not tested here.

Participants said they were satisfied with the courses and their apprenticeships. Since they are paid to attend and participate it is unlikely to find many dissenters.

Average earnings made by VTC graduates are slightly below national averages (IHSES), or at least not above them. Calculated per capita incomes linked to the “living wage” benchmark show that many VTC graduates are struggling to keep enough food on the table. For those not employed the majority of them live from family contributions (as dependents of the larger family group).

The study validated that the stipends paid to the VTC participants had been received. There were few anomalies, and these were attributed to random errors rather than systematic fraud. Validating that stipends paid to apprentices were actually received in full has been more complicated. The study found that 30% of apprentices were receiving less than the stipulated stipend amount. Women apprentices were 5 to 6 times more likely to be among those not receiving their full stipend amounts. This needs further investigation. (see Annex VIII for greater detail).

XI. RECOMMENDATIONS

1. CSP’s management experience with the apprenticeship program in Baghdad reinforces the need for early deployment of Monitoring and Evaluation and QAQC staff in identifying and validating program participants. There can be little doubt that initial beneficiary selection and oversight procedures were insufficient to prevent abuse as the tracking system was not robust enough to locate program participants to validate whether or not they had actually received payment or even existed. IRD’s management remedy closed these loopholes as evidenced by MEPP II’s ability to locate all of the sampled Baghdad participants in the final survey. That final management practice needs to be propagated to other vocational education and apprentice programs.
2. MEPP II experienced difficulty in working with the data provided to them by CSP. This difficulty stems from the independence of the units operating in the field. The M&E units collected information on program participants using different formats. The M&E database structure differs from one location to another: e.g. Kirkuk is different than Mosul which is different than Baghdad. It was necessary to reconcile the different formats to achieve a program-wide data set of apprentices and vocational education graduates that we could use for this study. This same lack of uniformity would hinder program-wide management studies similar to this one. It is recommended that each of the operating units maintain the same database structure and collect the same information. This extends to using the same forms and operating procedures. This need not affect the independence of management.
3. The CSP Rapid Programmatic Assessment Report, November 2007 by IBTCI recommended that CSP introduce an element of sustainability by targeting training-to-work graduates with BDP grants. The large percentage of employment coming from self-employment show how relevant this is. It was not apparent from this study whether

grants were made available to VTC graduates and apprentices.

4. Review the inclusion of women in the VTC program. Women, based on economic activity rates, are over-represented in the training. All but 7 of the 67 women interviewed did vocational education in sewing. Completion of the sewing course is awarded with a sewing machine. This is an attractive opportunity for any housewife. Is the program certain that these participants pose a threat of being caught up in the insurgency?
5. Set an employment rate benchmark for the vocational education program by using official government statistics as the guideline. The program should be able to meet or exceed known rates.
6. Investigate why women, especially in Baghdad, are apparently not receiving their full stipend amounts.

XII. LESSONS LEARNED

1. CSP oversight of the vocational education graduate and apprentice databases came late in the project cycle. When it did happen and the apprenticeship program was suspended the result was telling. Ensure that M&E and QAQC are engaged early in the program implementation to ensure proper program beneficiary selection.
2. Lack of database uniformity across program implementing units across provinces causes problems for overall program management.
3. Necessary revisions to the scope of work significantly reoriented the time frame of the analysis. This may have affected estimates of employment.
4. The VTC program did not set a benchmark for employment rate.

Annex I. USAID/FSO Response Matrix to the Study Recommendations

IBTCI Paragraph	IRD/CSP Response	Planned Actions/ Timeline for Follow up	USAID/FSO Comments
<p><u>Recommendation #1:</u> CSP's management experience with the apprenticeship program in Baghdad reinforces the need for early deployment of Monitoring and Evaluation and QAQC staff in identifying and validating program participants.</p>	<p>Apprenticeship program participants must be VoTech graduates---all VoTech graduates are potential apprentices.</p> <p>In all CSP cities (including Baghdad), apprenticeship program participants are tracked and validated by CSP apprenticeship placement officers.</p> <p>CSP Iraq-wide apprentice documents and reporting forms for pre-assessment, follow-up and monitoring, evaluation, and post-assessment are utilized uniformly by all CSP cities, and included in the CSP FOM.</p> <p>The validating of apprentices and payments to apprentices is included in our response to Recommendation #6.</p>	<p>Timeframe: IRD to document the procedure by May 31, 2009; IBTCI to upload the final report and annexes to the DEC upon final report completion in June 2009.</p>	<p>USAID suggests that IRD document the procedure; that IBTCI incorporates this matrix and IRD's response as an annex to this report; and that IBTCI loads the final report on the DEC per MEPP II contractual requirements for deliverables.</p>
<p><u>Recommendation #2:</u> MEPP II experienced difficulty in working with the data provided to them by CSP. This difficulty stems from the independence of the units operating in the field. The M&E units collected information on program participants using different</p>	<p>MEPP II clearly misunderstands the role of M&E on implementing participant databases and accordingly misuses the term "M&E database".</p> <p>CSP M&E uses two data structures for information gathering and reporting: the tracking sheets and the M&E database. Both data structures are fixed and uniform across all</p>	<p>IRD to report to USAID on the uniformity of M&E databases for other CSP program components by June 15, 2009. If they are not uniform, develop an action plan for</p>	<p>The VoTech and apprenticeship programs are now largely closed, therefore, it would be a make work exercise to retroactively revise the databases. However, USAID/FSO asks IRD to report to USAID on the</p>

IBTCI Paragraph	IRD/CSP Response	Planned Actions/ Timeline for Follow up	USAID/FSO Comments
<p>formats. The M&E database structure differs from one location to another: e.g. Kirkuk is different than Mosul which is different than Baghdad.</p>	<p>program components. M&E tools for collecting information are unified in CSP.</p> <p>CSP M&E neither collects nor maintains a data base of participant addresses, phone numbers and email addresses.</p> <p>Each CSP cities' EGY unit developed this database for VoTech and apprentices that was appropriate for their city. CSP implementing partners for the VoTech programs across CSP cities were different and often required different data. This information was made available to MEPP II; however information like mobile phone numbers is not collected in cities that have no mobile phone service.</p>	<p>correcting.</p>	<p>uniformity of the databases for the other ongoing CSP components.</p>
<p><u>Recommendation #3:</u> The program already envisions supporting VTC graduates with grants. The large percentage of employment coming from self-employment show how relevant this is. It was not apparent from this study whether grants were made available to VTC graduates and apprentices.</p>	<p>Although, CSP supports making VoTech trainees aware of the MSME grants, CSP does not envision this connection as a strategic result.</p> <p>Trainees, while in class, are made aware of CSP MSME grants program through multi presentations by CSP MSME officers. The CSP VoTech graduates who enroll in the apprenticeship programs carry this knowledge of CSP MSME grants with them and may share it with other non-CSP sponsored colleagues in the apprenticeship hosting businesses.</p>	<p>Closed. While a useful finding, CSP never envisioned this connection between VTC and BDP as a strategic result of the program. CSP has largely phased out of vocational education (support to MoLSA ended Jan 2009). If there are lingering activities in Baqubah</p>	<p>The report references that the CSP program already envisions supporting VTC graduates with grants. However, while this is an interesting finding and should be incorporated into future USAID programs, CSP regrettably did not envision this potential linkage between the VoTech and BDP components from the start.</p>

IBTCI Paragraph	IRD/CSP Response	Planned Actions/ Timeline for Follow up	USAID/FSO Comments
	<p>However, CSP's most successful grants were awarded to grantees aged more than 35 years due to their past working experience, capital and knowledge of starting new businesses. Many of the graduates were unlikely to meet the match requirement for the grants. Moreover, the business skills training was mainly oriented, but not limited to, approved grantees who are expected to have had prior experience and knowledge. In general, though it would have been ideal to provide the graduates with grants, there is not enough confidence that the graduates or apprentices possessed enough business skills and capital to meet the BDP grant program requirements.</p>	<p>with industrial schools, IRD should make graduates aware of BDP grants.</p>	<p>Thus, there is nothing of substance to report on awareness raising amongst VTC graduates.</p>
<p><u>Recommendation #4:</u> Review the inclusion of women in the VTC program. Women, based on economic activity rates, are over-represented in the training. All but seven of the 58 women interviewed did vocational education in sewing. Completion of the sewing course is awarded with a sewing machine. This is an attractive opportunity for any housewife. Is the program certain that these participants pose a threat of being caught up in the insurgency?</p>	<p>Yes, there have been multiple attacks carried by women in 2008. Women can earn income and are caretakers of the younger generation who are vulnerable for recruitment in violent acts. Women are part of CSP's targeted age group. Currently, sewing is seen as a job that a woman can do from her home. However, it is not CSP's specialty to conduct security analysis in relation to women's participation in violent acts.</p>	<p>Closed. USAID/FSO has reviewed the participation of women under a COIN strategy and finds it relevant for female suicide bombers. This is also a priority of MNF-I. USAID will target resources in Baqubah in particular for this purpose under Phase IV of the CSP extension.</p>	<p>While CSP largely focuses on unemployed young men, USAID/FSO is responsive to the upswing in female suicide bombers in Iraq, particularly in Baqubah where there have been 17 instances in recent months. Thus, the CSP program is addressing these needs through engaging at risk women in targeted areas. USAID/FSO believes that it is a valid COIN argument</p>

IBTCI Paragraph	IRD/CSP Response	Planned Actions/ Timeline for Follow up	USAID/FSO Comments
		Timeframe: October 2009 to February 2010.	to reduce vulnerabilities for potential female suicide bombers.
<p><u>Recommendation #5:</u> Set an employment rate benchmark for the vocational education program by using official government statistics as the guideline. The program should be able to meet or exceed known rates.</p>	<p>National employment rates can not be compared to CSP employment rates or be used as a guideline as the targeted populations are different. National statistics are based on tremendously larger samples, while CSP statistics are based on extremely smaller samples. Overall, CSP is expected to reduce unemployment by 1.25%; however, this can not be, primarily, associated with VoTech or apprenticeship programs as CSP generates employment through its grants and CIES activities.</p>	<p>Closed. CSP already measures national unemployment rates as part of the M&E plan.</p>	<p>IRD already measures the unemployment rate using Ministry of Planning statistics for youth between the ages of 17-25 and 25+ as part of its M&E plan and as a requirement of CSP Modification 12. However, it is difficult to attribute CSP alone to nation-wide changes in employment outcomes as CSP.</p>
<p><u>Recommendation #6:</u> Investigate why women, especially in Baghdad, are apparently not receiving their full stipend amounts.</p>	<p>CSP pays stipends based on actual days of training attended by the trainees. For example, if a trainee in a construction course misses four days in a month (average 22 training days). The trainee will receive \$82 out of the \$100 monthly stipend.</p> <p>The payment of stipends to the trainees in Baghdad and other CSP cities is established, controlled and monitored. This process involves VTC, EGY and finance personnel, in addition to the trainee who must bring photo identification. At the time of payment the trainee signs a receipt.</p>	<p>Timeframe: the Baghdad office is closing June 30, 2009. However, M&E will continue to August 31, 2009. IRD will complete these site visits within this time frame and report back to USAID.</p>	<p>USAID/FSO recommends that IRD QAQC or EGY officers randomly spot check and conduct visits to a sample of women apprentices in Baghdad.</p>

IBTCI Paragraph	IRD/CSP Response	Planned Actions/ Timeline for Follow up	USAID/FSO Comments
	In addition, trainees know when payments are due to them and any delays, or reduced payments, will lead to near riots as CSP has experienced.		



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MEPP II COMMUNITY STABILIZATION PROGRAM (CSP) VOCATIONAL EDUCATION AND APPRENTICESHIP STUDY

ANNEXES TO THE FINAL REPORT

May 31, 2009

This publication was produced for review by the United States Agency for International Development. It was prepared by Harvey Herr, Rich Mason, and Mohammed Zubaidy of International Business & Technical Consultants, Inc., Baghdad, Iraq.

MEPP II COMMUNITY STABILIZATION PROGRAM (CSP) VOCATIONAL EDUCATION AND APPRENTICESHIP SPECIAL STUDY

ANNEXES TO THE FINAL REPORT



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Monitoring and Evaluation Performance Program, Phase II (MEPP II)

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List of Acronyms

AoR	Area of Responsibility
AOTR	Agreement Officer Technical Representative
BOQ	Bill of Quantity
CERP	Commander's Emergency Relief Program
CFSVA	Comprehensive Food Security and Vulnerability Analysis 2008
COIN	Counter Insurgency
COP	Chief of Party
COTR	Contracting Officer's Technical Representative
CSO	Civil Society Organization
CSP	Community Stabilization Program
DAC	District Advisory Council
EOP	End of Project or Program
FSO	Focused Stabilization Office
FY	Fiscal Year
GOI	Government of Iraq
HQ	Headquarters
IACSS	Independent Institute for Administrative and Civil Society Studies
IBTCI	International Business & Technical Consultants, Inc.
IHSES	Iraq Household Socio-economic Survey
IR	Intermediate Result
LG	Local Government
LGP	Local Governance Program
LOP	Life of Project or Program
M&E	Monitoring and Evaluation
MEPP II	Monitoring and Evaluation Performance Program, Phase II
MOLSA	Ministry of Labor and Social Affairs
MOU	Memorandum of Understanding
MSME	Micro, Small or Medium Enterprise
NGO	Non-Governmental Organization
OJT	On-the-job Training
PMP	Performance Management Plan
PC	Provincial Council
PRT	Provincial Reconstruction Team
Q	Quarter
RF	Results Framework
RFA	Request for Application
RIG	Regional Inspector General
SME	Small or Medium Enterprise
SO	Strategic Objective
SOW	Scope of Work
SPSS	SPSS predictive analytics software www.spss.com
US	United States
USAID	United States Agency for International Development
USG	United States Government
USM	United States Military
VTC	Vocational Training Center
WB	World Bank

Annex I. Scope of Work (SOW) for the Vocational Education and Apprenticeship Study

I. Objective of the Study

The purpose of this SOW is to conduct a quantitative study of the Community Stabilization Program (CSP) Vocational Training and Apprenticeship Program. The CSP works nationwide in creating economic and social stability in Iraqi communities. The Vocational Training and Apprenticeship Program confronts the challenges of unemployment through an intensive vocational training initiative that helps prepare unemployed and underemployed Iraqis for a new technical profession.

Implemented in critical communities across Iraq and where there are vocational training programs supported through the Iraqi government, the initiative supports the overall USG effort to stabilize Iraq and help generate productive employment opportunities among young Iraqi men.

Within USAID/Iraq's Performance Management Plan, the vocational training program supports Strategic Objective 7, Reduced Incentives for Participation in Violent conflict, Intermediate Result (IR) 7.1, unemployment decreased with a focus on young men, and Sub-IR 7.1.2, employable skills improved.

This study will seek to quantitatively measure the overall effectiveness of the vocational training program by determining the employment status of the over 14,919 Iraqis that graduated from CSP sponsored programs after December 31, 2007. In addition to employment status percentage, the study will seek to determine if the graduates are employed in their area of study; if they are earning a living wage; and if the apprenticeship program was instrumental in helping graduates obtain long term employment their field of study.

II. Background

CSP supports both construction and non construction trade courses offered through facilities that are run by Iraq's Ministry of Labor and Social Affairs (MoLSA). Over 18,000 Iraqi men and women have graduated since the beginning of CSP in May 2006. Courses last two to four months with an average of 30 students per class.

This program provides student stipends, toolkits to graduates, salary supplements to instructors who work overtime, uniforms, consumables used in class, and specific operations and maintenance support to the VoTech Center. A number of the graduates become self-employed in their trades and are encouraged to apply for CSP's in-kind grants through the Business Development Program. Where possible, CSP links construction graduates to apprenticeships with local contractors typically lasting six to nine months. This vocational training program is also linked to job-placement efforts through MoLSA's employment service centers.

III. Study Questions

1. For graduates completing vocational training after January 1, 2008 and before December 31, 2008, what is the employment rate for these graduates?

- What percent of graduates are currently employed in the area of their study? If so, how many months of employment since graduation? What percentage are employed, but outside their area of study? What percentage is under-employed (employed but in unskilled labor)?
- If employed in their area of study, does the graduate earn a living wage?
- Do you believe the training helped you earn a living? Did the training enhance your life or contribute in a meaningful way to earning a living?
- Does the graduate realize any income from the skills learned in the vocational training? How relevant was the training to the needed skills for area of study? Did the training contribute in a meaningful way to earning a living?

2. For apprenticeships completed after March 31, 2008 and before December 31, 2008, what percentage of apprenticeships have lead to employment?

- Do apprenticeship graduates enjoy a higher employment rate when compared with other VTC graduates?
- Did the apprenticeships improve their employability? Did the job after the apprenticeship result in earning a living wage?
- Are the apprentices employed outside their area?
- Is the apprentice still employed by the business that conducted the apprenticeship?
- Did the apprenticeship result in earning a living wage?
- Does the former apprentice believe the apprenticeship enhance their overall employability?
- Did the apprentice receive the 50% matching salary provided by IRD? Did the apprentice receive a salary from the employer amounting to at least the 50% matching rate?

IV. Study Methods:

Design Methodology

The contractor should employ the most appropriate combination of research methods necessary to answer these questions. Methods may include but are not limited to desk research, surveys, focus groups and key informant interviews. The consulting firm should propose a methodology to USAID that is the most technically effective and cost efficient.

V. Team Composition

The contractor should propose an appropriate team composition to USAID.

VI. Schedule and Logistics

Task	Notional Timeline
Pre-study research and planning: review background documentation, design data analysis, design survey instruments, prepare report template.	2 weeks
Train Field Monitors, field test survey instruments, conduct surveys.	3 weeks
Consolidate data and perform high-cut analysis.	2 weeks
Develop preliminary findings and provide briefing to USAID.	2 weeks
Draft report	2 weeks
Total LOE	11 weeks

VII. Reports

A final, full briefing and written report on findings and recommendations will be provided not later than April 22, 2009. The study report will be the following format:

1. One page summary of report findings and recommendations
2. Executive summary of not more than 6 pages.
3. Main body of the report findings and recommendations of not more than 40 pages.
4. Report will be formatted in accordance with USAID publication, "Constructing an Evaluation Report," dated April 14, 2006.

The final report will be provided to USAID no later than 7 working days after receipt of comments from USAID on the draft. It is anticipated that USAID review of the draft will require up to two weeks, with comments to be returned to the team for final editing of the report.

VIII. Deliverables:

Report findings and recommendations on improving vocational training program effectiveness and efficiency.

Annex II. Strategic Objective 7 Causal Linkages and Development Hypothesis

Causal Linkages of the Strategic Objective 7.

USAID's "Results Framework Causal Linkage Methodology" determines the following: If the critical assumptions are not disrupted by unanticipated causes and if Intermediate Result (IR) 7.1 is achieved, and if IR 7.2 is achieved, and if IR 7.3 is achieved, then the SO is likely to be achieved. With IR 7.1, IR 7.2, and IR 7.3 working in tandem, short and long term jobs will be created through rehabilitation of infrastructure and provision of essential services in a rapid response mechanism. Vocational education will improve the skills of people hired to do this work as well as subsequent work that may become available. Business skills training will help improve and increase economic activity in the communities. The local government, having revitalized communities and provided jobs, will gain legitimacy in the eyes of citizens able to reside in an adequate environment for living a "normal" life, or who see improvements in the community environment that foster the rebuilding of families and homes. Impact on selected communities shall result in achievement of USAID's objective of a reduction in the incentives for participation in violent conflict.

Development Hypothesis for Strategic Objective 7:

The Fragile States Strategy prepared by USAID recommends seeking *short-term impact linked to longer-term structural reform. Experience demonstrates that without short-term, visible impact, a fragile situation is likely to continue to deteriorate. Because those living in fragile states cope with instability and uncertainty by focusing on the near term, short-term measures are critical to meeting their immediate needs and promoting an environment of security. At the same time, the urgent need for short-term measures should also be considered in the context of longer-term efforts required to advance stability, reform, and institutional capacity*¹. The Intermediate Results in SO 7 are designed to quickly provide employment through public works projects to vulnerable groups which will subsequently provide income to meet the needs of families in this conflict/post-conflict environment; provide practical opportunities in which to engage youth, particularly young men; and provide families and communities with a livable environment due to improved community infrastructure and the provision of essential community services. With increased income, youth activities, employment, labor skills, business development, essential services and infrastructure, the aim is that these linked activities will provide reduced incentives for violent conflict in the short term.

¹ Fragile States Strategy, USAID 2005, page 3

Annex III. Description of the Vocational Training and Apprenticeship Program

B.6.2 Vocational Training and Apprenticeship Program

In order to promote economic growth and social stability, CSP provides Iraqis with essential job skills through vocational training (VTC) courses and job apprenticeships, as well as job placement assistance afterwards. The CSP VTC program has been a huge success and its implementation has been widely embraced by Iraqis countrywide, with both registration and enrollment numbers growing at an increasingly rapid pace.

CSP will continue to work closely with Iraq's Ministry of Labor and Social Affairs (MoLSA). To date, MoLSA provided nearly 34 percent of the total combined \$12.8 million spent, or over \$4.3 million. MoLSA's financial contribution towards the program clearly demonstrates the Government of Iraq's (GOI) strong interest in supporting vocational training initiatives for Iraqis. As the capacity of MoLSA continues to grow, it is anticipated that they will increase financial support to the training. An additional benefit of CSP's strong relationship with MoLSA is that it improves MoLSA's credibility with the Iraqis since MoLSA is now seen as actively addressing unemployment.

Much of CSP's work is done behind-the-scenes in this way, helping the GOI to stand up and put an Iraqi face on projects. CSP assists MoLSA with staff, equipment and structural needs of its training centers. It also facilitates train-the-trainer workshops for newly-hired instructors to help develop their interactive teaching skills. Future train-the-trainer workshops will be implemented by MoLSA in trades in which CSP has already supported such a workshop as CSP has provided MoLSA with the necessary mechanisms to independently implement similar future activities. In this manner, CSP will serve as a means through which to provide the necessary start-up costs and support to ensure MoLSA's level of utility towards training and placing Iraqis in long-term jobs to improve the economy is sustainable long after CSP ends. The Chief of Police for Iskandariya noted publicly in June 2008 that the significant drop in crime in Iskandariya city and its vicinity could be directly attributed to the more than 1,200 trainees who are enrolled in the CSP funded Iskandariya Vocational Training Center and are no longer unemployed and involved in insurgent activities. This is very positive feedback for the GOI on the conflict mitigation impact of the EGY program activities in North Babil.

Vocational training is offered in construction trade courses (painting, electrical installation, plumbing, masonry, and construction carpentry) and non-construction trade courses (electrical wiring, welding, HVAC, auto mechanics, computer maintenance, cosmetology, sewing, generator repair, small appliance repair, elevator installation, lathing and welding). If appropriate for the economic environment of the region, VTC courses will be agriculturally focused. VTC courses average from two to four months in duration and are held for four hours a day, five days a week.

VTC courses are tuition-free, and participants are offered a stipend for the duration of the courses. To facilitate vocational training, CSP collaborates with a wide range of national and local Iraqi agencies, including local Iraqi government, as well as the MoLSA, the Ministry of Education (MoE) and the Ministry of Youth (MoY). Vocational training is also coordinated with through the Multi-National Force-Iraq (MNF-I) and the

PRT. CSP provides toolkits to each VTC graduate, customized to their newly-acquired trade; over 3,000 graduates have been verified as using their toolkits to generate income and to be self-sufficient.

The apprenticeship program is considered an extension of vocational training and allows VTC graduates to enhance and build upon their recently-acquired construction or non-construction skills as well as lead to potential long-term employment. The graduate is given an opportunity to prove their abilities to an employer to parlay the apprenticeship into a long-term position. For immediate impact on the target population and to increase the actual number of trainees, most apprenticeship programs end after three months when the employer decides to take on the apprentice(s) as permanent employees after experiencing their competencies. Moreover, apprenticeship programs are designed to upgrade vocational training graduates' skills in which more practical hands-on skills are practiced. The average time period for developing more hands-on skills for the vocational training graduate would be three months; though, in some case more time is needed. CSP's apprenticeship program is a minimum of, but not limited to, three months.

CSP provides half of the apprentice's salary during this period, with the understanding that the employer/trainer will pay the other half of the salary and provide corresponding benefits. Apprentices and trainers are monitored and evaluated according to pre-established technical training curricula. To date, pre-established technical training curricula have been challenging because of the requirement of further testing at the end of the apprenticeship to ensure those skills have been achieved. CSP is still in the process of determining a mechanism through which to test the apprentices at the end to ensure they have enhanced their abilities. CSP would then have to hire additional master crafts men to conduct the field tests to evaluate the skill level. This is planned for the next fiscal year. Previous efforts to involve MOLSA on this initiative have not been successful.

Apprenticeship opportunities are identified through direct contact with small businesses, GOI hired contractors and CSP grantees/contractors. The apprenticeship program not only impacts the skill-level of the graduate, but can and has proven to grow small businesses because of the reduction in direct labor costs, which is the added incentive to any business.

Working in parallel to the apprenticeship program is the job placement initiative, which serves more to link graduates with existing opportunities rather than creating new opportunities. There will be more movement towards establishing a greater link between MoLSA VTC and EG by increasing support to MoLSA's existing Employment Services Centers (ESCs). Increased support includes expanding MoLSA's ESC outreach effort by establishing new facilities on the grounds of vocational training centers, revamping their unemployment database to handle the increased volume and provide technical training to the MoLSA ESC staff to improve their level of utility. CSP will not serve as the source for operational costs for these centers. CSP will provide the start-up costs necessary and MoLSA will be encouraged to accept all responsibilities with respect to maintenance and monthly operational costs associated with the ESCs. Similar establishments will be created with the MoE and MoHE in order to bolster their existing mechanisms with an emphasis on start-up costs, but all monthly operational costs and maintenance must be provided by the MoE and MoHE to ensure sustainability.

While transitioning all 19 VTCs to MOLSA, CSP will continue its coordination with MOLSA in the development of their instructors' capacity as well as new curricula development. As MOLSA is the legitimate Iraqi institute that provides vocational training services, their curricula and course contents are designed to address short-term rapid vocational training that qualifies at risk youth to access gainful employment within a relatively short period of time. MoE curricula are designed to address long-term vocational education in which students spend three years acquiring skills in a specific area; CSP will work with MoE to adapt their curricula and course contents to meet the urgent needs of youth for training and accessing employment. Transitioning CSP VTC programs to MoE and MoHE will require a change analysis to determine strategies and the most proficient approaches to implementing its VTC programs. CSP will support more MoE schools to provide vocational training services to the same number of at-risk youth. Utilizing larger numbers of MoE schools will give CSP more flexibility to cover geographical areas where MOLSA vocational training centers do not exist. In VTCs with large waiting lists of vocational training applicants, the program will focus more on MoHE large vocational training institutes given the more qualified instructors and more sophisticated equipment.

Annex IV. Research Method and Sample Design

This sample is designed to answer the questions posed in the “Scope of Work (SOW) for Iraq Vocational Training and Apprenticeship Program Study” dated March 11, 2009 (preceded by SOWs dated June 22, 2008, 8 July 2008). The SOW proposes to quantify differences between apprentice and vocational education graduate employment rates. The assumed use of a logistic regression to assess the null hypothesis that employment rates for VTC graduates and Apprentices are the same underscores the estimates of the necessary sample size.

In experimental design groups are defined by the major variables of interest: in this case the main variables of interest defining the groups are whether or not a vocational education graduate went on to an apprenticeship. The design compares the main effects and the interactions effects of the factor. In pure experimental design vocational education graduates would be randomly assigned to different groups before the treatments were applied. Here the “treatment” is an apprenticeship. The data we use here are *a priori* and we have no control over who is assigned to the treatment group. This lack of an ability to randomly assign subjects to groups means that our method is a “quasi-experimental” design.

The sample size determination considers the size needed to make valid statistical inferences about the comparative differences between the groups. In the analysis of the data we propose to use several techniques to gauge differences between groups: analysis of variance when measuring differences in mean values, and logistic regression when measuring the odds that different circumstances are statistically related to a higher likelihood of employment.

This special study is complex and significant manipulation of existing databases was necessary in order to define the two main study groups. In IRD’s CSP program each area of responsibility (AoR) maintains a separate Access database that contains tables of apprentices and vocational education graduates. Differences between the AoR are often slight, but enough to make it difficult to merge the data from each AoR into one dataset. This special study was directed to focus its attention on individuals who graduated after January 1, 2008 and those who completed an apprenticeship after March 31, 2008. Preparing for the study first entailed extracting from the databases those individuals who qualified by date. Data from each AoR were then merged to form a single date-qualified dataset for vocational education graduates and another for apprentices (Kirkuk data were in a unique format and were treated separately).

Vocational education interaction effects: To prepare for the possibility of testing the interaction effects of different types of vocational training information was gathered from IRD’s databases about types of vocational education provided. From these databases 22 different categories of training were tabulated. To make the study manageable (and keep the sample size small) we needed many fewer than 22 categories. IBTCI met with IRD to find a way to collapse training categories. Working with IRD the number of training categories reduced from twenty-two to seven. The seven categories are: sewing, metal work, maintenance trades, automotive trades, carpentry, construction trades, and electronics.

With but a few exceptions all of the apprentices are also vocational education graduates. For this reason individuals who are apprentices may also occur in the vocational education graduates dataset. The study asks for a comparison of individuals who *only* completed vocational education with those who went on to become apprentices. This meant that individuals in the apprentice dataset had to have their vocational education records removed from the vocational education dataset. This was done by first merging and then matching apprentice records with vocational education records (matching was done using names and telephone numbers). Once matched the apprentice and matching vocational education records were removed from the vocational education dataset creating a “vocational education only” dataset and a dataset of apprentices.² These two datasets then became the sample frame from which samples were selected.

Pre-testing the Questionnaire

Throughout the report we refer to a “pretest” as the collection of all those techniques and activities used to evaluate survey questions and/or survey procedures before data collection begins. Pre-testing survey instruments is a best practice. Pretests ensure that questions asked are understood plus providing a basis for estimating non-response. Survey non-response was detected as a problem with the initial survey pretests held in September and October 2008. Forty apprentices and forty vocational education graduates were selected at random from the database for the pretest. After repeated efforts by the field monitors to locate respondents they were able to find only one in three of the apprentices and about half of the vocational education graduates. In addition, only one of the apprentices confirmed that he had actually been an apprentice. Investigations followed that attempted to identify reasons for the poor response. Plausible reasons being that respondents had moved away from their stated location, or that the personal information on the database used in the sample selection was faulty. With these low levels of apprentice response conducting a wider study was not feasible. A decision was made to review the field procedures and questionnaire and do a second pretest.

The second pretest sample of forty apprentices was selected from the original database; while a full sample of 420 vocational education graduates was also attempted (most apprentices and vocational education graduates were in Baghdad). For the second round the questionnaire was revised and the monitors instructed to work first with IRD, and then with the Ministry of Labor and Social Affairs (MOLSA) staff at the vocational training centers (VTCs) to try and locate respondents who could not be reached using the telephone contacts initially provided. Monitors were instructed to make four attempts to reach the respondents (on average more than five attempts were made). Nevertheless, once again the pretest showed very low response rates. In the second round monitors could only locate one in five of the vocational education graduates from the full sample of 420 (a result that was significantly worse than the first round), and similarly only one in five of the apprentices were located. These were disastrous results that reflected poorly on project management since both vocational education graduates and apprentices are paid from project funds. How could it be that a sample of program

² For the sake of brevity the matching procedure is not fully explained.

participants could not be located (especially when on average 5 attempts were made to find the respondents with the assistance of IRD and MOLSA)?

A December 2008 meeting was called between the AOTR, IRD CSP and MEPP II. During the meeting IRD revealed that the Baghdad apprentice program had been suspended from October 2007 through the end of December 2007, the period of interest for the study. It was postulated that this was likely to be the reason for the low response seen from the apprentices. Reasons given for the suspension were that vetting procedures for assigning apprentices had been lax and details on the apprentices were unreliable. It was implied that payment procedures for apprentices would not stand up to a rigorous audit and that corrective action was necessary. During the October to December 2007 suspension the apprenticeship program in Baghdad was revamped with each of the participating businesses vetted and apprentices validated and database records updated. This vetting exercise resulted in the removal of some participating business and apprentices from the database making it unlikely that apprenticeships occurring before December 2007 would be found. The fact that such a large number of apprentices could not be located remains a vexing problem and is discussed elsewhere in this report.

From the pretests it was learned that concepts of employment and apprenticeships were not always clear to respondents. Because of this revisions were made to the questionnaire on three occasions aimed at providing improved screening questions about status of employment.

One key screening question determined whether or not a respondent would be asked questions about his apprenticeship. It was known from the IRD database whether or not an individual had been an IRD sponsored apprentice. Therefore we had advanced knowledge about a respondent's apprenticeship history. Incongruously, the initial pretest results showed that many who were known to be apprentices indicated on the questionnaire that they were not. The anomaly was partially due to an incorrect Arabic reference in the screening question. Initial versions of the questionnaire referred in Arabic to a "vocational rehabilitation" program. Advice was sought from IRD and MOLSA on the correct wording and revisions made to the questionnaire that corrected this problem. The final questionnaire is shown in Annex V.

It was agreed that a third attempt to interview apprentices and vocational education graduates be made this time selecting only apprenticeships that occurred after March 31, 2008 and vocational education graduates after January 1, 2008. Using post-suspension data it was possible to go directly to the home of the VTC grad or apprentice due to improvements in how IRD validated VTC grads and apprentices. Sample pretests drawn from this pool showed greatly improved response rates. Eighty-seven per cent of apprentices responded (100% in Baghdad) while 57% of vocational education graduates responded during the pretest. Response rates had improved enough to risk going ahead with the full sample.

Results of the third pretest are shown in tabular format below:

governorate	Completed responses	currently employed	% response	% employed
-------------	---------------------	--------------------	------------	------------

Baghdad Votech	20	1	100%	5%
Baghdad Apprentice	20	8	100%	40%
Hilla Votech	6	2	30%	33%
Hilla Apprentice	16	6	80%	38%
Mosul Votech	8	3	40%	38%
Mosul Apprentice	16	6	80%	38%
Total Votech	34	6	57%	18%
Total Apprentices	52	20	87%	38%
Total Pretest	86	26	72%	30%

Calculating Sample Size

Underlying the proposed study methodology is the statistical test of a null hypothesis. That null hypothesis is that there is no statistical difference between employment rates for apprentices and vocational education graduates. Employment is a binary outcome; either the individual is employed or he/she isn't. For this characteristic a ratio estimate comparing apprentices with VTC graduates is appropriate, but using logistic regression gives the opportunity to explore the effect that other respondent characteristics might have on employment outcomes. For this reason the study design wants to ensure that application of logistic regression to the survey data it is highly likely to result in valid statistical observations. We know what we want to do with the data, but how large of a sample is needed to ensure we have a good chance of meeting the study objectives?

Starting with the idea of using logistic regression on the data we make estimates of sample size using several parameters. The value of these parameters are either estimated or assigned. One of these parameters is the **effect size**. In this study the effect size is the estimated difference in employment rates between apprentices and VTC graduates. We have an estimate of effect size from the pretest results (see “% Employed” column in the pretest result table above). We estimate that 38% of apprentices are employed, and 18% of VTC graduates are employed. The study needs to ensure that it has a large enough sample to “ensure” that the null hypothesis will be rejected given what we know about the effect size. We decide beforehand what level of confidence we need to “ensure” that our findings are valid. In this instance we want to have 95% confidence that findings are true. We adjust the sample size until it is large enough to give confidence in the results.

Balancing effect size, confidence level and sample size is called a “power analysis.” A power analysis was executed in the planning of this study.³ Power analysis is used to anticipate the likelihood that the study will show a significant effect. For this study the significance level (alpha) is set at 5% (a 95% confidence interval). This means that there will be a 5% chance of a Type I error. A Type I error is committed when the true effect is null but the study yields a significant p-value and leads the researcher (in error) to reject the null. Sample size is adjusted until the “power” of the study design reaches 80% or

³ The statistical software Sample Power, version 2, distributed by SPSS, Inc. was used for this analysis.

more. Power is the proportion of studies similarly configured that would yield a statistically significant effect (assuming the effect size, sample size, and criterion alpha specified in the study design).

Hypothesis to be tested

One of our goals for the study is to test the null hypothesis that the event rate is identical between Apprentices and VTC Graduates groups.

Effect size

Power is computed to reject the null hypothesis under the following alternate hypothesis: For apprentices the event rate is 38%, for VTC graduates the event rate is 18%. These estimated employment rates are based on sample pretest figures.

Sample size.

The study decided to include a total of 400 subjects, assigned as follows: 37.5% in Apprentices, 62.5% in VTC Graduates. The higher number of VTC Graduates is to compensate for a higher anticipated non-response rate that we found for them in the third pretest.

Alpha and tails.

The criterion for significance (alpha) has been set at 0.05. The test is 2-tailed, which means that an effect in either direction will be interpreted. The significance level can be reduced to 0.10 should overall non-response be higher than anticipated, or if the actual effect sizes are closer together than those estimated with the pretest.

Power.

For this selection of parameters, effect size (event rates of 0.38, 0.18) sample size (400), and alpha (0.05, 2-tailed), power is 0.97. This means that 97% of studies would be expected to yield a significant effect, rejecting the null hypothesis that the event rates are identical. In these kinds of social science studies a power level of 0.80 is commonly thought of as adequate. We have a larger sample size than needed as a cushion against the possibility of high non-response (the two initial pretests giving cautionary evidence that this might happen).

The final sample was drawn at random and is proportional to the total number of time qualified VTC graduates and apprentices in each city. For this reason results were planned to be self-weighting.

Final sample size by city

City	Vocational education graduates	Apprentices	Total
Al Qaim	15	1	16
Baghdad	122	21	143
Basrah	10	15	25
Falluja	5	6	11
Hilla	19	20	39
Mosul	39	13	52
Tal Afar	6	16	22
Kirkuk	34	58	92
Total	250	150	400

Implementation of the Vocational Education Graduate and Apprentice Survey

IIACSS field monitors were provided with a list of names of vocational education graduates and apprentices who were to be interviewed. The list was separated by city. In each city one or more field monitors under the guidance of a supervisor attempted to locate each individual on their list. In many cases the list included a physical address and mobile telephone number of the person to be interviewed. This was not uniformly the case and in some areas (Al Qaim, Falluja, Mosul, Hilla) additional research was needed to determine how to make contact with the interviewee. Security was a concern for both those being interviewed and the monitor and precautions were taken.

IIACSS and its field monitors gained experience from conducting three field pretests of the questionnaire and field practice prior to this final survey. IBTCI was able to work with IIACSS to clarify any uncertainties that included asking monitors to revisit a respondent when uncertainties arose. Field work on the survey began on March 25, 2009 and ceased on April 26, 2009. In surveys of this kind there are always stragglers that remain to be contacted. By the April 26 cut date, monitors had been able to find 285 out of the 400 in the sample. There is no doubt that it would have been possible to locate a few additional respondents, but it is unlikely that additional completed responses would influence the overall findings. Not all of the 285 respondents located cooperated or gave valid responses: 25 of them refused to be interviewed.

The table below is the final result of the field survey by response category. Response by city was uneven. The column labeled “contact information inadequate” meant that the list of respondents to be sampled had neither a telephone number nor an address. In these cases IIACSS was directed to contact IRD or the VTC for assistance although the intention had been not to use MOLSA or IRD, but to do everything possible to go to the home or business location of the respondent. This was not always possible. Since the information on the respondents comes directly from the IRD databases lack of contact information reflects the quality of the data kept by the different offices. Hilla was far and away the most difficult followed by Anbar.

Two hundred and sixty survey instruments were completed. This overall number is comprised of 91 apprentices and 169 VTC graduates. Using these response numbers the calculated sample power is greater and .90. These useable data are for VTC graduates graduating after January 1, 2008 and for apprenticeships since March 31, 2008.

Governorate		Survey Response						
		Completed	Refused	Not at home	Invalid address or telephone	Security prevented access	Contact information inadequate	Total
Anbar	A	3 43%	0 0%	0 0%	0 0%	0 0%	4 57%	7 100%
	V	11 55%	0 0%	0 0%	0 0%	0 0%	9 45%	20 100%
Baghdad	A	19 95%	0 0%	0 0%	1 5%	0 0%	0 0%	20 100%
	V	108 88%	0 0%	3 2%	12 10%	0 0%	0 0%	123 100%
Basra	A	10 71%	0 0%	0 0%	0 0%	0 0%	4 29%	14 100%
	V	7 70%	0 0%	0 0%	0 0%	0 0%	3 30%	10 100%
Hilla	A	4 20%	0 0%	0 0%	0 0%	0 0%	16 80%	20 100%
	V	2 11%	0 0%	0 0%	0 0%	0 0%	17 90%	19 100%
Kirkuk	A	41 71%	9 16%	0 0%	4 7%	0 0%	4 7%	58 100%
	V	24 71%	3 9%	0 0%	6 18%	0 0%	1 3%	34 100%
Nineva	A	14 48%	0 0%	0 0%	3 10%	0 0%	12 41%	29 100%
	V	17 40%	13 30%	0 0%	5 12%	0 0%	8 19%	43 100%
Total	A	91 62%	9 6%	0 0%	8 5%	0 0%	40 27%	148 100%
	V	169 68%	16 6%	3 1%	23 9%	0 0%	38 15%	249 100%

Annex V. Special Votech Study Survey Instrument

EGY LONG-TERM JOB CREATION FROM VOCATIONAL EDUCATION -SPECIAL STUDY INSTRUMENT-	
INSTRUCTION TO THE MONITOR: COMPLETE ITEM 1 TO 10 OF THIS FIRST PAGE OF THE MONITORING FORM BEFORE PROCEEDING TO THE PROJECT SITE.	
BENEFICIARY INFORMATION PANEL (1-10 ARE TO BE COMPLETED FROM DATABASE)	
1 TRAINING CENTER NAME	2 TYPE OF TRAINING
3 BENEFICIARY NAME	4 SITE VISIT DATE (DAY 0-31/MONTH 01-12/YEAR 2008)
5 GOVERNORATE:	6 DISTRICT (QADA):
7 SUB-DISTRICT (NAHIYA):	8 MAHALLA/ZUQAQ:
9 MONITOR'S NAME	10 MOBILIZER'S NAME
11 RESULT OF INTERVIEW: COMPLETED1 REFUSED.....2 NOT AT HOME3 INVALID ADDRESS.....4 SECURITY PREVENTED ACCESS5 OTHER (SPECIFY).....9	12 DATA ENTRY CLERK: NAME: _____ DATE OF ENTRY _____
MONITOR NOTES: <i>IN THIS SPACE THE MONITOR RECORDS NOTES ABOUT WHY THE SITE VISIT WAS NOT COMPLETED.</i>	
MONITOR NOTES: <i>IN THIS SPACE THE MONITOR RECORDS HIS OBSERVATIONS ABOUT THE MONITORING VISIT. RECORD HERE IMPRESSIONS ABOUT THE VISIT. WHO WAS PRESENT. WERE THEY WELCOMING OR DISTANT...</i>	

PART I: CHARACTERISTICS OF THE VOCATIONAL EDUCATION BENEFICIARY

#	QUESTION	RESPONSE	SKIP
	HERE PREPARE THE RESPONDENT FOR WHAT IT IS YOU WANT TO TALK TO HIM ABOUT. TELL HIM HOW LONG IT WILL TAKE AND WHAT THE INFORMATION WILL BE USED FOR. ASK PERMISSION TO PROCEED.		
	FIRST I WOULD LIKE TO ASK ABOUT YOU AND THE PEOPLE IN YOUR HOUSEHOLD		
1	NAME AND TITLE OF RESPONDENT		
2	SEX OF RESPONDENT	MALE 1 FEMALE 2	
3	WHAT IS YOUR CURRENT AGE IN YEARS?		
4	HOW MANY PERSONS LIVE IN YOUR HOUSEHOLD INCLUDING YOURSELF?		
5	HOW MANY PERSONS IN YOUR HOUSEHOLD ARE BELOW 15 YEARS OF AGE?		
6	HOW MANY PERSONS IN YOUR HOUSEHOLD ARE AGE 65 OR ABOVE?		
7	HOW MANY PERSONS IN YOUR HOUSEHOLD DEPEND ON THE INCOME YOU EARN?		
8	WHAT IS YOUR MARITAL STATUS?	SINGLE, NEVER MARRIED 1 MARRIED..... 2 DIVORCED..... 3 SEPARATED 4 WIDOWED 5	
9	WHAT IS THE HIGHEST LEVEL OF EDUCATION YOU HAVE OBTAINED? (CATEGORIES FROM COSIT)	ILLITERATE..... 1 READ AND WRITE..... 2 ELEMENTARY 3 INTERMEDIATE 4 SECONDARY..... 5 VOCATIONAL SCHOOLS 6 VOCATIONAL CENTERS 7 DIPLOMA 8 BACHELOR 9 HIGH DIPLOMA..... 10 MASTER..... 11 DOCTORATE..... 12	

PART II: VOCED BENEFICIARY QUESTIONS

#	QUESTION	RESPONSE	SKIP
1.	HAVE YOU RECEIVED VOCATIONAL TRAINING AT A MOLSA TRAINING CENTER IN THE PAST THREE YEARS?	YES.....1 NO2	SKIP OUT
2.	DURING WHAT MONTH AND YEAR DID YOU COMPLETE YOUR VOCATIONAL TRAINING COURSEWORK? <i>TWO DIGIT MONTH/FOUR DIGIT YEAR</i>		
3.	HOW DID YOU HEAR ABOUT THE VOCATIONAL EDUCATION PROGRAM? <i>WRITE ALL RESPONSES</i>		
4.	WHAT VOCATIONAL EDUCATION TRAINING DID YOU RECEIVE?	CARPENTRY01 MASONRY.....02 PAINTING.....03 REINFORCED STEEL STRUCTURE04 CONSTRUCTION CARPENTRY.....05 AUTOMOTIVE06 CAR ELECTRICITY07 LATHING.....08 WELDING.....09 SEWING10 PLUMBING11 HVAC12 ELECTRICAL INSTALLATION.....13 MOTOR WINDING.....14 CONTROL15 APPLIANCES16 ELECTRONICS17 TV AND SATELLITE MAINTENANCE18 PLASTERING19 OTHER (SPECIFY)99	
5.	WHY DID YOU DECIDE TO PARTICIPATE IN THE VOCATIONAL EDUCATION PROGRAM?	TO IMPROVE MY SKILLS1 TO INCREASE MY CHANCE FOR A JOB.....2 TO GET A JOB IN THIS LOCATION ..3 TO MAKE SOME MONEY WHILE I LOOKED FOR WORK4 OTHER (SPECIFY)9	

#	QUESTION	RESPONSE	SKIP
6.	WHY WERE YOU SELECTED TO BE IN THE PROGRAM?	KNEW SOMEONE ON THE VTC STAFF1 KNEW SOMEONE AT MOLSA2 DK.....8 OTHER (SPECIFY)9	
7.	IN YOUR OPINION, DID YOU HAVE ENOUGH SKILLS AND TRAINING WHEN YOU COMPLETED THE COURSE TO BE USEFUL TO THE WORKPLACE?	YES.....1 NO2	
8.	PLEASE EXPLAIN YOUR ANSWER. <i>WRITE ALL RESPONSES</i>		
	NOW I WANT TO ASK YOU ABOUT YOUR TRAINING EXPERIENCE.		
9.	HOW MUCH WERE YOU PAID PER MONTH WHILE YOU WERE IN THE VOCATIONAL EDUCATION PROGRAM? (PLEASE WRITE IN ID)	DINAR	
10.	WOULD YOU SAY THAT THE DURATION OF YOUR TRAINING WAS SUFFICIENT?	YES.....1 NO2	
11.	PLEASE EXPLAIN WHY THE TRAINING DURATION WAS OR WAS NOT SUFFICIENT. <i>WRITE ALL RESPONSES</i>		
12.	DO YOU THINK THE TRAINING RECEIVED WAS WORTHWHILE?	YES.....1 NO2	
13.	PLEASE EXPLAIN YOUR ANSWER. <i>WRITE ALL RESPONSES</i>		

PART III: EMPLOYMENT HISTORY

WE ARE NOW GOING TO ASK YOU ABOUT YOUR EXPERIENCE FINDING WORK SINCE YOU GRADUATED FROM VOCATIONAL TRAINING. BY WORK WE MEAN ANY ACTIVITY THAT YOU DO YOURSELF FOR WHICH YOU RECEIVE MONEY OR NON-CASH BENEFITS SUCH AS FOOD OR SHELTER. THIS COULD INCLUDE A FULL-TIME OR PART-TIME JOB WITH THE GOVERNMENT OR A BUSINESS FOR A SALARY OR NON-SALARY JOBS SUCH AS SELLING NEWSPAPERS OR OTHER GOODS, DRIVING A TAXI, WORKING IN A WORKSHOP, WORKING IN A VOCATIONAL TRADE OR ANY OTHER TYPE OF JOB, BIG OR SMALL, FOR WHICH YOU EXCHANGE YOUR TIME AND LABOR FOR MONEY OR OTHER BENEFITS.

#	QUESTION	RESPONSE	SKIP
1.	IN WHICH OF THE FOLLOWING WAYS HAVE YOU SUPPORTED YOURSELF AND YOUR FAMILY SINCE YOU GRADUATED FROM VOCATIONAL TRAINING? <i>READ RESPONSES AND CIRCLE ALL THAT APPLY</i>	BENEFITS FROM THE GOVERNMENT (CASH OR NON-CASH) 1 ASSISTANCE FROM FAMILY 2 ASSISTANCE FROM FRIENDS..... 3 FULL-TIME WAGE JOB..... 4 PART-TIME WAGE JOB 5 NON-WAGE WORK (STREET SALES, SHOPS, TEMPORARY JOBS FOR AN HOURLY WAGE OR FIXED AMOUNT, ETC.) 6 NONE OF THE ABOVE 8 OTHER (SPECIFY) 9	GOTO 3 GOTO 3 GOTO 3
2.	PROBE FOR ABOVE: ARE YOU SURE THAT YOU HAVE NOT DONE ANY KIND OF WORK TO MAKE MONEY SINCE YOU COMPLETED VOCATIONAL TRAINING?	YES..... 1 NO 2	PART IV
3.	ARE YOU CURRENTLY SUPPORTING YOURSELF THROUGH ANY TYPE OF WORK??	YES.....1 NO 2	GOTO NEXT PAGE
4.	IF SO, WHAT TYPE OF WORK?	FULL-TIME WAGE JOB..... 1 PART-TIME WAGE JOB 2 NON-WAGE WORK (STREET SALES, SHOPS, TEMPORARY JOBS FOR AN HOURLY WAGE OR FIXED AMOUNT, ETC.) 3	

5.	HOW MANY HOURS HAVE YOU WORKED IN THE PAST SEVEN DAYS?	SATURDAY SUNDAY MONDAY TUESDAY..... WEDNESDAY THURSDAY FRIDAY..... TOTAL HOURS _ _ _	ALL – GOTO NEXT PAGE
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NOW WE ARE GOING TO ASK YOU SOME QUESTIONS ABOUT ALL OF THE WORK YOU HAVE DONE BEGINNING WITH YOUR CURRENT JOB AND GOING BACK TO YOUR DATE OF GRADUATION FROM THE VOCATIONAL TRAINING.

#	TYPE OF WORK	WAS THIS JOB IN YOUR TRAINING FIELD (READ OUT FROM P2_q4)? (Y/N)	IF NO, WHAT KIND OF WORK WAS IT? (WRITE THE WORK CODE AS IN P2 Q4)	HOURS PER WEEK	DATE THAT YOU STARTED THIS JOB (MONTH AND YEAR)	DATE THAT YOU FINISHED THIS JOB (MONTH AND YEAR)	INCOME (DINAR PER WEEK)	IS/WAS THIS ENOUGH TO SUPPORT YOUR FAMILY? (Y/N)
1.	SELF EMPLOYED/HAVE YOUR OWN BUSINESS..... 1							
	SELF EMPLOYED/THROUGH AGRICULTURE OR LIVESTOCK..... 2							
	DOMESTIC HELP IN ANOTHER HOME 3							
	PUBLIC SERVANT/GOVERNMENT 4							
	EMPLOYED BY A BUSINESS 5							
	EMPLOYED AS A PROFESSIONAL (LAWYER, DOCTOR, TEACHER, ETC.) 6							
	OTHER (PLEASE EXPLAIN) 9							
2.	SELF EMPLOYED/HAVE YOUR OWN BUSINESS..... 1							
	SELF EMPLOYED/THROUGH AGRICULTURE OR LIVESTOCK..... 2							
	DOMESTIC HELP IN ANOTHER HOME 3							
	PUBLIC SERVANT/GOVERNMENT 4							
	EMPLOYED BY A BUSINESS 5							
	EMPLOYED AS A PROFESSIONAL (LAWYER, DOCTOR, TEACHER, ETC.) 6							
	OTHER (PLEASE EXPLAIN) 9							
3.	SELF EMPLOYED/HAVE YOUR OWN BUSINESS..... 1							
	SELF EMPLOYED/THROUGH AGRICULTURE OR LIVESTOCK..... 2							
	DOMESTIC HELP IN ANOTHER HOME 3							
	PUBLIC SERVANT/GOVERNMENT 4							
	EMPLOYED BY A BUSINESS 5							
	EMPLOYED AS A PROFESSIONAL (LAWYER, DOCTOR, TEACHER, ETC.) 6							
	OTHER (PLEASE EXPLAIN) 9							

PART IV: APPRENTICESHIP BENEFICIARY QUESTIONS

#	QUESTION	RESPONSE	SKIP
1.	DID YOU PARTICIPATE IN AN APPRENTICESHIP PROGRAM AFTER YOU COMPLETED YOUR VOCATIONAL TRAINING?	YES.....1 NO2	END
2.	DURING WHAT MONTH AND YEAR DID YOU BEGIN YOUR APPRENTICESHIP? <i>TWO DIGIT MONTH/FOUR DIGIT YEAR</i>		
3.	DURING WHAT MONTH AND YEAR DID YOU COMPLETE YOUR APPRENTICESHIP? <i>TWO DIGIT MONTH/FOUR DIGIT YEAR</i>		
4.	ARE YOU CURRENTLY EMPLOYED?	YES.....1 NO2	GOTO 7
5.	ARE YOU STILL EMPLOYED BY THE SAME BUSINESS WHERE YOU DID YOUR APPRENTICESHIP?	YES.....1 NO2	
6.	ARE YOU CURRENTLY EMPLOYED IN WORK THAT UTILIZES SKILLS LEARNED AS AN APPRENTICE?	YES.....1 NO2	
7.	HOW DID YOU HEAR ABOUT THE APPRENTICESHIP PROGRAM? <i>WRITE ALL RESPONSES</i>		
8.	IN WHAT AREA OF WORK WAS YOUR APPRENTICESHIP?	CARPENTRY01 MASONRY02 PAINTING.....03 REINFORCED STEEL STRUCTURE04 CONSTRUCTION CARPENTRY05 AUTOMOTIVE06 CAR ELECTRICITY07 LATHING.....08 WELDING.....09 SEWING10 PLUMBING11 HVAC12 ELECTRICAL INSTALLATION.....13 MOTOR WINDING.....14 CONTROL15 APPLIANCES16 ELECTRONICS17 TV AND SATELLITE MAINTENANCE18 PLASTERING.....19 OTHER (SPECIFY)99	

#	QUESTION	RESPONSE	SKIP
9.	WHY DID YOU DECIDE TO PARTICIPATE IN THE APPRENTICESHIP PROGRAM?	TO IMPROVE MY SKILLS 1 TO INCREASE MY CHANCE FOR A JOB.....2 TO GET A JOB IN THIS LOCATION ..3 TO MAKE SOME MONEY WHILE I LOOKED FOR WORK4 OTHER (SPECIFY)9	
10.	WHY WERE YOU SELECTED TO BE IN THE PROGRAM?	KNEW SOMEONE ON THE VTC STAFF 1 KNEW SOMEONE AT MOLSA2 DK.....8 OTHER (SPECIFY)9	
11.	IN YOUR OPINION, DID YOU HAVE ENOUGH SKILLS AND TRAINING WHEN YOU COMPLETED YOUR VOCED COURSE TO BE USEFUL TO THE APPRENTICESHIP WORKPLACE?	YES..... 1 NO.....2	
12.	PLEASE EXPLAIN YOUR ANSWER. <i>WRITE ALL RESPONSES</i>		
13.	IN YOUR OPINION, DID YOU HAVE ENOUGH SKILLS AND TRAINING WHEN YOU COMPLETED YOUR APPRENTICESHIP TO BE USEFUL TO THE WORKPLACE?	YES..... 1 NO.....2	
14.	PLEASE EXPLAIN YOUR ANSWER. <i>WRITE ALL RESPONSES</i>		
	NOW I WANT TO ASK YOU ABOUT YOUR APPRENTICESHIP EXPERIENCE.		
15.	HOW MUCH WERE YOU PAID PER MONTH WHILE YOU WERE IN THE APPRENTICESHIP PROGRAM? (PLEASE WRITE IN ID)	DINAR	
16.	WOULD YOU SAY THAT THE DURATION OF YOUR APPRENTICESHIP WAS SUFFICIENT?	YES..... 1 NO.....2	
17.	PLEASE EXPLAIN WHY THE TRAINING DURATION WAS OR WAS NOT SUFFICIENT. <i>WRITE ALL RESPONSES</i>		
18.	DO YOU THINK THE APPRENTICESHIP WAS WORTHWHILE?	YES..... 1 NO.....2	
19.	PLEASE EXPLAIN YOUR ANSWER. <i>WRITE ALL RESPONSES</i>		
20.	DO YOU THINK THE APPRENTICESHIP IMPROVED YOUR OVERALL PROSPECT OF EMPLOYMENT?	YES..... 1 NO.....2	

Annex VI. Survey Implementation Schedule

	Votech/Apprenticeship Study Implementation	Date
1.	SOW received, reviewed and study method formulated	6/23/2008
2.	Initial Votech and Apprentice data received (7 to 23 August)	8/23/2008
3.	Vocational education course clarification and reduction to study areas; estimates of design effect	9/15/2008
4.	Sample design to support factorial design drafted	9/23/2008
5.	Apprentice and Votech records screened for qualifying dates	9/24/2008
6.	Apprentice database merged with Votech database	9/24/2008
7.	Apprentices matched with Votech records	9/24/2008
8.	Votech only graduates segmented into separate study domain file	9/24/2008
9.	Votech only data segmented into agreed study areas	9/24/2008
10.	Votech graduates sampled from each study area (redone with Arabic name corrections)	9/24/2008
11.	Apprentices sampled from qualified apprentice file (redone with Arabic name corrections)	9/24/2008
12.	Votech samples merged with Apprentice sample	9/24/2008
13.	First draft questionnaire completed	9/16/2008
14.	Purchase Order to IIACSS with SOW for Pretest	9/22/2008
15.	Pretest sample selected	9/24/2008
16.	Draft questionnaire translated	9/25/2008
17.	Pretest sample distributed to IRD and IIACSS	9/25/2008
18.	Points of contact for pretest indentified	10/07/2008
19.	Pretest is fielded	10/08/2008
20.	Low response rate on pretest for apprentices resulted in a second pretest for apprentices, but a full sample for votech	11/1/2008
21.	Questionnaire redrafted, IIACSS directed to work with MOLSA to locate apprentices and votech grads	11/1/2008
22.	Second apprentice pretest sample selected	11/3/2008
23.	Votech sample selected	11/3/2008
24.	2 nd Purchase Order 9006 to IIACSS with SOW for Pretest	11/14/2008
25.	Votech and Apprentice samples to IIACSS	11/8/2008
26.	2 nd draft questionnaire translated	11/8/2008
27.	Second apprentice pretest sample fielded	11/15/2008
28.	Votech sample fielded	11/15/2008
29.	Pretest again revealed a low response rate for apprentices, decision taken to go back to IRD and restart the study. SOW revised to look at votech and apprentices post Jan 1, 2008	12/10/2008
30.	Revised data received from IRD (Jan 10 to Feb 1)	2/1/2009
31.	Apprentice and Votech records screened for qualifying dates	2/4/2009
32.	Apprentice database merged with Votech database	2/4/2009
33.	Apprentices matched with Votech records	2/4/2009
34.	Votech only graduates segmented into separate study domain file	2/4/2009
35.	Apprentices sampled from qualified apprentice file	2/4/2009
36.	Votech samples merged with Apprentice sample	2/23/2009
37.	Questionnaire redrafted, IIACSS directed to go directly to residence of votech or apprentice.	2/9/2009

	Votech/Apprenticeship Study Implementation	Date
38.	3rd apprentice pretest sample selected	2/5/2009
39.	3 rd Votech pretest sample selected	2/5/2009
40.	3 rd Purchase Order 9007 to IIACSS with SOW for Pretest	2/5/2009
41.	3 rd Pretest is fielded	2/7/2009
42.	3 rd Pretest results are satisfactory following thorough follow-up in the field. Employment levels were low leading to revision of the SOW and methodology.	3/5/2009
43.	SOW revised to remove comparisons between types of training.	3/12/2009
44.	Questionnaire revised, interview procedures clarified as needed.	3/12/2009
45.	Final full sample is selected	3/11/2009
46.	4th Purchase Order 9009 to IIACSS with SOW full survey	3/23/2009
47.	Final sample survey list sent to IIACSS	3/12/2009
48.	Main survey fielded (votech only)	3/25/2009
49.	Field survey halted, no further response expected	4/26/2009
50.	Data entry and validation begins as interviews are completed	4/27/2009
51.	First sample data received from IIACSS	4/23/2009
52.	Sample data merged with databases	4/28/2009
53.	Data analysis begins	4/28/2009
54.	Data analysis completed	5/2/2009
55.	IIACSS final deliverables under purchase order received (scanned questionnaires)	

Annex VII. Why the Community Stabilization Program's apprenticeship program in Baghdad was suspended

Beginning in October of 2007 and lasting through December of that same year, the Community Stabilization Program (CSP) management suspended their Baghdad apprenticeship activities. CSP Karada became dissatisfied with the evidence being provided as the justification for payments to apprentices. Timesheets, photos and other documentation for some participants raised questions. During this time, there was no systematic approach to payment of the apprentices by the Baghdad office. A majority of the payments were made directly to the apprentice and the monitoring process was inadequate. New management in Karada realized the vulnerabilities and took steps to tighten management oversight processes.

Host businesses for the apprenticeship program had in some cases, been proposed by MOLSA instructors and in others, by the vocational education graduates themselves. Initial processes in the apprenticeship program did not require verification or a pre-visit to the location to ensure it had the ability to employ the apprentices or to pay for them. The program was open to the possibility of fake or incapable businesses hiring the apprentices. Furthermore, CSP EGY officers could not use the provided documentation to verify whether the business actually existed as many of these businesses, it was said were in "insecure areas" and could not be visited. The presence of apprentices at the business and whether they were working and receiving full payment could not be verified. Once the CSP staff became suspicious they began delaying payments and started to cancel some projects. Thereafter CSP staff began receiving threats, and this led to the ultimate suspension of all apprenticeships in the Baghdad program.

The program was halted between October and December 2007 and all new placements of apprentices suspended. Each business that had apprentices was validated and verified by a Quality Assurance/Quality Control (QAQC) and Economic Growth and Youth (EGY) officer. Where validation was not possible, the business was dropped. At this time a new system for tracking participants was created that included the addresses of the businesses and the apprentices. By January 2008, the new process was in place and by February 2008, the first placements under the new system were made. No new business is considered if the QAQC or EGY officer cannot reach it during the verification step. Potential apprentices are interviewed by the EGY officer at the vocational training center (VTC) and their graduation from vocational training is verified. According to IRD, as a result of the new system, placement of apprentices is deliberately slow and meticulous and intended to minimize fraudulent activities.

Under the new system monitoring visits are conducted at least twice a month over a 3-month period, once each month by QAQC and once each month by EGY. Additional visits are made if monitoring reports raise concerns. During the monitoring visit all present apprentices are required to sign the monitoring report to confirm their presence; ID's are checked and photos taken. The method of payment to the businesses and apprentices changed. Payments now are made to the business owner on a reimbursement-against-receipts basis only that requires signed receipts showing that the apprentice was paid as well as confirmatory timesheets. In addition, a sample of the apprentices is contacted directly to verify receipt of payment from the owner.

Regions outside of Baghdad have not gone through a similar vetting process, reportedly because similar problems have not been observed in these programs. The magnitude of

unverified apprentices may be indicated by comparing pre-suspension to post-suspension apprenticeship numbers in Baghdad. A quick look shows that the 3-month period from April to June in 2007 recorded an estimated 850 apprentice placements under the old system, while the same period in 2008 shows an estimated 190 apprentice placements under the new system.⁴

⁴ Estimated using the apprentice end dates using IRD data provided to IBTCI.

Annex VIII. Analysis of the VoTech and Apprentice Survey Data

Preparing the data.

The survey response data were merged with data from the IRD CSP databases. This was done to add the information from the database to the survey data and to permit an understanding of survey non-response. Most importantly the classification of VTC graduate (V) or Apprentice (A) was added from the database to the interview data. Respondents had also been asked a question that screened them into one category or the other (Part IV, Question 1). As is shown below it was possible that respondents own classification might differ from the database record. Slippage should only occur from VTC graduate into apprenticeships. These possibilities were explored in the analysis below.

A description of the VTC course given to the respondent was taken from the database, but is also asked on the survey instrument. This was done as a cross-check. VTC graduates and apprentices are paid a stipend. Stipends vary according to city, type of vocational training and whether they are in training as vocational education students or apprentices. These data are necessary to compare individual income responses to the anticipated stipend amount. These values were added to the interview data according to the table below. US dollar amounts were converted to Iraqi Dinar using an exchange rate of \$1 = 1000 ID.

Monthly Stipend Amounts Paid by CSP				
City	Vocational Education Stipend		Apprentice Stipend	
	Construction	Non-Construction	Construction	Non-Construction
Al Qaim	\$100	\$75	\$510	\$510
Baghdad ¹	\$100	\$75	\$550	\$175
Basra ²	\$100	\$75	\$160	\$160
Falluja	\$100	\$75	\$450	\$450
Hilla	\$100	\$75	\$150	\$150
Mosul	\$100	\$75	\$150	\$150
Tal Afar	\$100	\$75	\$150	\$150
Kirkuk	\$100	\$75	\$260	\$260
1) In Baghdad there is a variance in the apprentice stipend from one Apprentice Service Provider (ASP) to another.				
2) Two distant VTC's received marginally more to cover transport cost				

Statistical outliers and data validation

Validation starts by ensuring that we know the outcome of each proposed respondent interview. Four hundred individuals were selected for interviews, and for all but three of these we know the result of the attempted interview. For the data analysis only the completed interviews are included. Two hundred sixty out of four hundred proposed

interviews resulted in completed survey instruments. Two of these 260 gave incomplete or inconsistent information and were excluded. The resulting analysis examines 258 responses.

In all survey data some responses are misunderstood or recorded incorrectly. These can largely be detected by examining the distributions of responses to questions, or by comparing responses that should be logically connected.

Frequency distributions can detect statistical outliers. Outliers are values that are more than two or three standard deviations from the mean. Statistical outliers flag responses that need to be corrected or explained such as extremely high or low reported earnings. An extra zero can be added or dropped inadvertently. Each statistical outlier was investigated by returning to the original survey instrument to validate the entry.

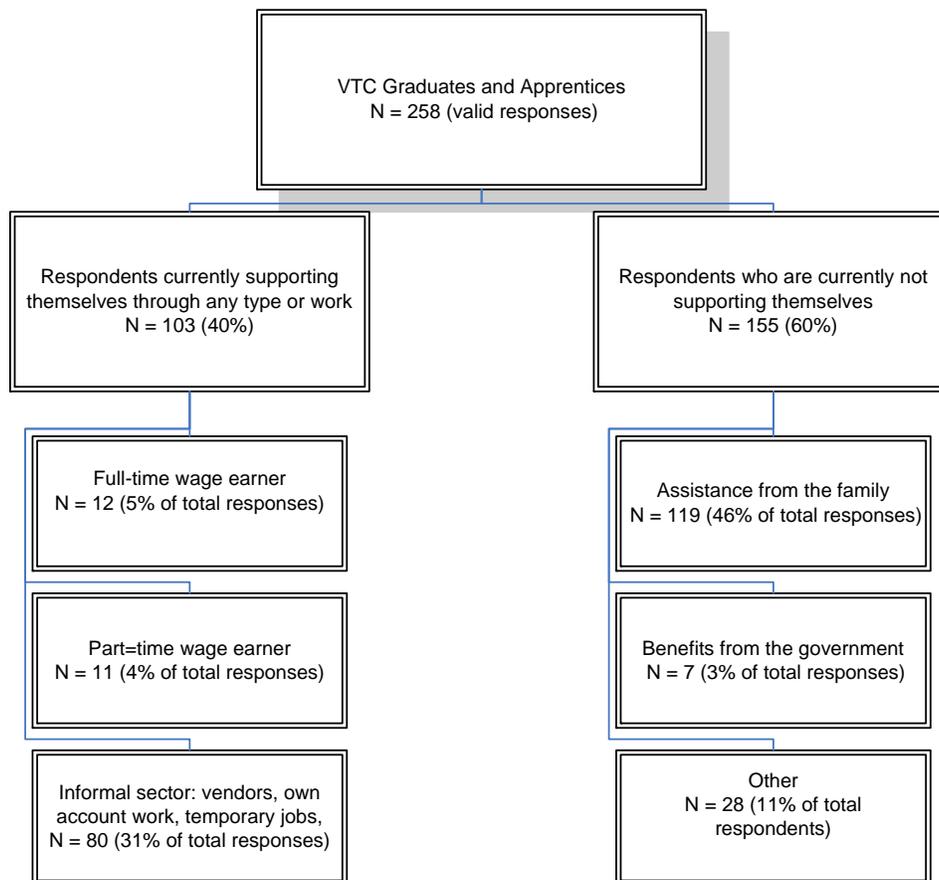
For questions with categorical responses a frequency distribution detects values that lay outside the valid range. An explanation is sought for why such values have occurred. The procedure when this is detected is to look at how the data were entered and compare it to what was written on the survey instrument. Survey instruments are in Arabic, but then translated into English for data entry. This can be a source of error. When entries are inexplicable the value is declared a “missing value” and is not included in the analysis. For this reason there may be slight variance or seemingly inconsistencies in the number of responses tallied in different tables; this is due to missing values being excluded.

The survey instrument was designed to allow respondents to explain why they selected a response category. These explanations were referred to when a response appeared unusual. If responses were unusual the original scanned survey instrument was referred to in both Arabic and English. Should lack of clarity remain the monitor who collected the information was asked to explain the response. As a result of this process two of the completed questionnaires were discarded.

Identifying employment

Current employment status is the focus of this study. Precautions were taken in the design of the survey instrument to crosscheck employment status. This was done by first asking a generic question about the ways respondents supported themselves and their families since their VTC graduation. Question 1, Part III of the survey instrument asks for categorical responses aimed at covering the range of possible ways of supporting yourself. The response categories can be divided into those associated with working to make money and those that do not. For those selecting categories not associated with making money they were asked to confirm that they had not done any kind of work to make money. If they did confirm this they were counted as having never been employed.

The diagram below explains the ways respondents supported themselves. Forty percent of respondents were employed making money doing some kind of work. Sixty percent remain in a dependency status mainly supported by assistance from their family.



For those forty percent who are supporting themselves the vast majority are own-account workers in what looks like the informal sector.

Employment history questions were asked in Part III of the survey instrument. The intention was to probe the respondent for any past employment episodes since VTC graduation. Respondents currently unemployed might have been employed earlier. However, only one instance of a previous employment episode was noted, and this individual was currently employed.

VTC graduate or apprentice?

The survey was designed to select enough VTC graduates (V) and Apprentices (A) to ensure that a comparison of employment rates was statistically possible. It was known beforehand from IRD records whether respondents were V or A. It was assumed that the records were accurate and respondents assigned correctly. To validate the assumption, respondents were asked in Question 1, Part IV whether they had participated in an apprenticeship program after they completed VTC training. When comparing the administrative record with the interview response there was a mismatch. Twenty-five percent of those classified administratively as A reported during the interview that they did not participate in an apprenticeship. Ten percent classified as V

said that they had participated in the apprenticeship program. This is shown in the table below. For the analysis we use the categories based on the interview rather than the IRD record (the column totals from the table A=84 and V =174).

IRD Records		Interview Bases		
		A	V	Total
A	Count	67	22	89
	Row N %	75%	25%	100%
V	Count	17	152	169
	Row N %	10%	90%	100%
Total	Count	84	174	258
	Row N %	33%	67%	100%

Why would differences occur? A VTC graduate could have become an apprentice since the database was constructed; Vs could become As, but As can't become Vs. An A in the IRD records should not become a V in the interview; this would be in reverse order. That is an error that needs to be explained. Since the study design is based on the number of Vs and As in the sample this finding has implications for the validity of the design. However, on balance we have sufficient Vs and As to conduct the study (assuming the effect size estimate was accurate).

Geographic distribution of the respondents.

The sample was selected at random and proportional to the number of apprentices or VTC graduates known from administrative records to be in each of the governorates.⁵ The percentage of apprentices and VTC graduates in each governorate according to IRD's administrative record is shown below.

Sample frame distribution of apprentices and VTC graduates.

Governorate	Apprentices		VTC Graduates	
	Count	%	Count	%
Anbar	221	7%	1982	11%
Baghdad	425	13%	7686	44%
Basrah	209	6%	1112	6%
Hilla	456	14%	1382	8%
Mosul	758	22%	2943	17%
Kirkuk	1300	39%	2396	14%
Total	3369	100%	17501	100%

⁵ These are the apprentices after 31 March 2008 and VTC graduates after 1 January 2008.

The random sample done for this study approximates this distribution. However, the distribution of completed responses differs slightly. This occurred because of high non-response in certain governorates (see Annex IV above). The table below presents the distribution of completed interviews. Anbar, Hilla and Mosul are under-represented in completed interviews. Hilla and Anbar have very few completed interviews and governorate-level results cannot reliably be reported.

Distribution of completed interviews.

Governorate	Apprentices		VTC Graduates	
Anbar	3	3%	11	7%
Baghdad	19	21%	108	64%
Basra	10	11%	7	4%
Hilla	3	3%	2	1%
Mosul	14	16%	17	10%
Kirkuk	40	45%	24	14%
Total	89	100%	169	100%

“earning a living wage.”

Several of the questions in the scope of work refer to “earning a living wage.” Since this is not defined in the scope of work a definition is provided here. The concept of earning a living wage is linked in this study to the definition of “food security.”

A recent (2007-2008) survey on income and expenditure (IHSES) and another on food security (CFSVA) in Iraq make available data that can be used to form a definition.⁶ The IHSES calculated per capita income distributions nationally and by governorate. The CFSVA developed a wealth index that it correlated to food shortages. Notably, the CFSVA reported that for households in the lowest wealth index quintile, 56%

[From the CSFVA]

Causes of food insecurity and vulnerability

The Comprehensive Food Security and Vulnerability Analysis survey found that the main factors affecting food insecurity in Iraq consisted of the following:

- Wealth status;
- Income and expenditure;
- Education level of the head of households;
- Geographic location (urban vs. rural);
- Sex of household head (female headed more vulnerable).

Wealth and income were the strongest predictors of food security status, with 83 percent of the food insecure households in the poorest two quintiles.

⁶ The “Iraq Household Socio-Economic Survey” IHSES- 2007, Tabulation Report, Central Organization for Statistics and Information Technology (COSIT), Kurdistan Region Statistics Organization, and the World Bank; and the “Comprehensive Food Security and Vulnerability Analysis in Iraq”, 2008, Central Organization for Statistics and Information Technology (COSIT), Kurdistan Region Statistics Organization, Ministry of Planning Development Cooperation, Nutrition Research Institute, Ministry of Health, Iraq and the United Nations World Food Program.

experienced food shortages during the 30 days preceding their interview (see page 39 of the CFSVA). The wealth index is shown to be strongly correlated to income (see the table below). Our own survey asks respondents for their earnings last month. These earnings figures are used to place the respondent in an IHSES income distribution group. Those with earnings in the IHSES two lowest income groups (approximately the lowest income quintile) are identified for this study as not earning a living wage (i.e., two lowest income groups estimate the lowest wealth index quintile). Essentially, it is likely that those in the lowest income groups will experience food shortages. Respondents were thus classified as earning or not earning a “living wage.”

The table below shows the relationship between consumption group and wealth index quintiles. Food consumption is a technical term that defines the nutritional content of food consumed by a family.

“WFP has created a custom dietary diversity tool intended to capture different consumption patterns in terms of both the number and frequency of food groups consumed. The “food consumption score” is calculated by examining the number of times certain foods (grouped into basic food groups) are consumed in the 7 days preceding the survey and then weighting them by approximate nutrient density values.”⁷ It is from these scores that the consumption groups are formed.

Wealth index

Wealth is the value of all natural, physical and financial assets owned by a household, reduced by its liabilities. While measuring wealth is possible, it is difficult and requires making assumptions about the value of assets. Therefore, as a proxy measure, a wealth index was constructed using a series of different socio-economic measures.

The first step in the construction of the wealth index in Iraq was to identify a series of assets or socioeconomic proxies that would be a comparable measure of wealth across regions. A number of variables were determined to meet this criterion. Using these variables, a principal component analysis (PCA) was conducted. The first component was selected and wealth quintiles (poorest, poorer, moderate, richer and richest) were developed.

Food consumption by wealth index group.

Food consumption group by wealth index quintile					
	Percentile group of wealth index (Wealth Quintiles)				
	poorest	second	third	fourth	richest
Poor consumption	64%	19%	12%	4%	1%
Borderline consumption	47%	22%	18%	9%	3%
Acceptable consumption	17%	18%	21%	21%	23%
Source: Comprehensive food Security and Vulnerability Analysis in Iraq (2008), Table 21.					

The wealth index correlates strongly (.529) with income and is the basis for linking our survey incomes to the wealth quintiles and food insecurity. The two lowest per capita income groups in the table below are the guide used for determining our “living wage”

⁷ CFSVA page 45

reference. Per capita incomes below approximately 70,000 ID per month will not meet the criteria for earning a “living wage.” Iraq’s Public Distribution System (PDS) is the world’s largest public food distribution system covering 97% of Iraqi households providing them with basic food commodities. It is likely that the households of VTC graduates and apprentices will have access to the PDS to supplement their earnings. Caution is needed as many of the survey respondents are living in large households and we do not have information on whether there are other income earners in the same household.

Per Capita Income Distributions and Average Per Capita Income (2007)

Per capita nominal income group	Grand total: urban and rural average per capita nominal income (ID 000/Month)	Total (% distribution per capita nominal income group)
<60	46	13
60-79	73	12
80-99	93	13
100-119	113	12
120-139	133	10
140-159	154	9
160-179	176	6
180-199	202	5
200-299	246	12
300-399	378	4
400+	753	4
Total	145	100

Source IHSES Table 9-39a and Table 9-9a (Provisional results)

For reference in the study the table below provides age-related wage statistics. Average wages for men in the comparable age groups are between 250,000 ID and 379,000 ID. This is a benchmark for comparison with interview stated earnings.

Age specific wages in Iraq IHSES

Age (years)	Average wage (ID 000/month)		
	Men	Women	Total
15-19	250	253	250
20-24	357	223	348
25-29	332	221	317
30-34	345	252	331
35-39	379	314	368
40-44	384	325	373
45-49	416	343	399

Average wage (ID 000/month)			
Age (years)	Men	Women	Total
50-54	450	426	446
55-59	414	375	409
60-64	472	354	453
65 or more	342	233	332
Source: IHSES Table 9-11 (Provisional)			

Low response rates in initial pretests

Survey non-response was detected as a problem with the initial survey pretests held in September and October 2008. Forty apprentices and forty vocational education graduates were selected at random for the pretest. After repeated efforts by the field monitors to locate the respondents they were able to find only one in three of the apprentices and about half of the vocational education graduates. In addition, only one of the apprentices confirmed that he had actually been an apprentice. Investigations followed that attempted to identify reasons for poor response. Plausible reasons being that respondents had moved on, or that the database that is the source of the information used in the sample selection was faulty.

A second pretest sample of forty apprentices was selected from the original database; while a full sample of 420 vocational education graduates was also attempted (most apprentices and vocational education graduates were in Baghdad). For the second round the questionnaire was revised and the monitors were instructed to work first with IRD, and then with the Ministry of Labor and Social Affairs (MOLSA) staff at the vocational training centers (VTCs) to try and locate respondents not reachable using the telephone contacts initially provided. Monitors were instructed to make four attempts to reach the respondents. Nevertheless, once again the pretest showed very low response rates. In the second round monitors could only locate one in five of the vocational education graduates from the full sample of 420 (a result that was significantly worse than the first round), and similarly only one in five of the apprentices were located. These were disastrous results that reflected poorly on project management. Vocational education graduates and apprentices are both paid from project funds, how could it be that we could not locate the program participants (especially given that on average 5 attempts were made to find the respondents in the samples)?

A meeting was called between the AOTR, IRD CSP and MEPP II. During this December 2008 meeting, IRD revealed that the Baghdad apprentice program had been suspended during the period of interest. It was said that this was likely to be the reason for the low response of apprentices. Reasons given for the suspension were that vetting procedures for assigning apprentices were lax and details on the apprentices were unreliable. Payment procedures for apprentices would not stand up to a rigorous audit. Between October and December of 2007 the apprenticeship program in Baghdad was revamped with each of the participating businesses vetted and apprentices validated and records updated. This vetting exercise resulted in the removal of some participating businesses and apprentices from the database. Apprenticeships that preceded the December 2007 cutoff date were unlikely to be found.

It was agreed that a third attempt to interview apprentices and vocational education graduates be made this time selecting only apprenticeships that occurred after March 31, 2008 and vocational education graduates after January 1, 2008. Sample pretests drawn from this pool showed greatly improved response rates: 87% response for apprentices and 57% for vocational education graduates. Response rates had improved enough to risk going ahead with the full sample.

Characteristics of Apprentices and VTC graduates

Respondents were asked a series of common demographic questions covering age, education, marital status, number of persons in the household, and the number who are dependent on the respondent's earnings. These were asked to confirm that program participants are in the appropriate age range, and to triangulate these common demographics with other surveys to gain confidence in our results.

Gender:

One-quarter of the respondents were female. Apparently fewer female respondents went on to become apprentices, but statistically the difference is not well supported. [95% confidence interval for the proportion of males is 70% to 80%, and for females 20% to 31%]

Part 1 Q2: Gender of respondent	V or A Interview based		
	A	V	Total
Male	68 81%	125 72%	193 75%
Female	16 19%	49 28%	65 25%
Total	84 100%	174 100%	258 100%

Age:

All participants interviewed were within the targeted age group.

Part 1 Q3: What is Your Current Age in Years?			
	A	V	Total
Mean	24	24	24
Median	23	24	24
Minimum	18	16	16
Maximum	34	35	35
Count	84	174	258

Education:

More than sixty percent of responding participants had not completed secondary school.

Part 1 Q9: Highest level of education attained			
	A	V	Total
Illiterate	2 2%	1 1%	3 1%
Read and write	2 2%	4 2%	6 2%
Elementary	24 29%	40 23%	64 25%
Intermediate	25 31%	61 35%	86 34%
Secondary	15 18%	48 28%	63 25%
Vocational school	2 2%	5 3%	7 3%
Diploma	10 12%	11 6%	21 8%
Bachelor	2 2%	3 2%	5 2%
Total	<u>82</u> <u>100%</u>	<u>173</u> <u>100%</u>	<u>255</u> <u>100%</u>

Dependents:

The mean household size is typical for Iraq. These are young households with few members 65 or over.

		A	V	Total
Part 1 Q4: Persons in household (including respondent)	Mean	8	8	8
	Median	8	7	7
Part 1 Q5: Persons in household under 15	Mean	2	2	2
	Median	2	2	2

		A	V	Total
Part 1 Q6: Persons in household 65 or above	Mean	0	0	0
	Median	0	0	0
Count		84	174	258

The number of household members that are dependent on the income earner was determined from Part 1, Question 7. Approximately one-half of the total persons in the households are dependent on the income earner (according to the income earners assessment). This relatively low proportion relates to the marital status and age of the respondent. When calculating per capita income the number of dependents was used as the denominator. Per capita income is the basis for determining “living wage” status.

Employed VTC graduates and Apprentices				
		A	V	Total
Part 1 Q4: Persons in household (including respondent)	Mean	8	7	7
	Median	9	6	7
	Sum	197	550	747
Number of dependents (corrected)	Mean	4	5	5
	Median	3	5	5
	Sum	96	380	476

Marital status

Both VTC graduates and apprentices are young and single (hence fewer dependents).

Part 1 Q8: Marital status	A	V	Total
Single, never married	50	108	158
	60%	62%	61%
Married	32	59	91
	38%	34%	35%
Divorced	0	4	4
	0%	2%	2%
Separated	1	1	2
	1%	1%	1%
Widowed	1	2	3
	1%	1%	1%
Total	84	174	258
	100%	100%	100%

Responses to SOW questions about VTC graduates

We now turn to answering the specific questions raised in the SOW.

A. Employment rate for vocational education graduates.

All respondents were VTC graduates, but some went on to become apprentices. The employment rate for VTC graduates who did not go on to become apprentices is reported here. Contrary to expectations based on our pretests VTC graduates were more likely to be employed than were apprentices. Forty-six percent of VTC graduates said that they were earning money for work that they did. The findings shown here are statistically significant using the Chi-Square test. A participant is about twice as likely to be employed if he/she is a VTC graduate rather than an apprentice.

Currently engaged in any type of work?	A	V	Total
Yes, currently supporting myself	24 29%	80 46%	104 40% ⁸
No, not doing any kind of work to make money	60 71%	94 54%	154 60%

Ratio Statistics for Employment (converted to percentages)

Group	Mean	95% Confidence Interval for Mean	
		Lower Bound	Upper Bound
V	46%	39%	54%
A	29%	19%	38%
Overall	40%	34%	46%

The confidence intervals are constructed by assuming a Normal distribution for the ratios.

⁸ These employment rates are low when compared to the general population of the same age group. The IHSES reports the following unemployment rates for men: age 15-19 26.5%, age 20-24 19.3%, age 25-29 13.6%, age 30-34 8.2%. These are rates for the economically active population something we did not specifically assess with this study.

Employment rates are affected by the age and gender of the respondent. Economic activity rates for men and women vary significantly in Iraq (see the right-hand column in the table below). Women are much less likely to be in the labor force than are men. When men and women mature they increase labor force participation. In the age groups of interest Iraq-wide participation rates for women are less than 20% implying that at least some women in this program may not be seeking employment.

Part 1 Q2: Gender of respondent	Age groups	Yes, currently supporting myself		No, not doing any kind of work to make money		Total	Iraq-wide Economic Activity Rates ⁹
		Count	Row N %	Count	Row N %		
Male	15-19	4	17%	19	83%	23	47%
	20-24	29	34%	57	66%	86	75%
	25-29	43	61%	27	39%	70	92%
	30-35	10	71%	4	29%	14	94%
Female	15-19	1	9%	10	91%	11	5%
	20-24	4	16%	21	84%	25	11%
	25-29	9	41%	13	59%	22	17%
	30-35	4	57%	3	43%	7	18%
Total	15-19	5	15%	29	85%	34	26%
	20-24	33	30%	78	70%	111	43%
	25-29	52	57%	40	44%	92	54%
	30-35	14	67%	7	33%	21	56%

VTC graduates employed in their area of study.

Eighty-six percent of VTC graduates are employed in their area of study. This was determined through questions on employment history. This validates that the training is being put to use.

Work in area of training			
	A	V	Total
Yes	19	70	89
	83%	86%	86%
No	4	11	15

⁹ The IHSES

Work in area of training			
	A	V	Total
	17%	14%	14%
Total	23	81	104
	100%	100%	100%

The vast majority of those employed were self-employed. We know from other studies that these are likely to be family run businesses operating in the informal sector. This suggests that business development grants could facilitate their sustainability.

Part 3 Q6: Type of employment on most recent job			
	A	V	Total
Self-employed/have my own business	22 92%	58 74%	80 78%
Self-employed/in agriculture or livestock	0 0%	6 8%	6 6%
Domestic help in another home	0 0%	1 1%	1 1%
Public servant/government	1 4%	7 9%	8 8%
Employed by a business	1 4%	5 6%	6 6%
Other (specify)	0 0%	1 1%	1 1%
Total	24 100%	78 100%	102 100%

B. Months of employment since graduation.

The 46% of VTC graduates who were employed on average have enjoyed 8 months employment since the end of their training. For VTC graduates the end of training was after January 1, 2008 through December 31, 2008. Some VTC graduates may have already been employed before they entered the training. For example, a self-employed plumber may decide to take a vocational education course to improve skills in a trade he already knows something about. His self-employment could precede his entry into training. This occurred for a few of the respondents. Under Part II, Question 8 it was not uncommon for participants to say that they had improved skills in a field they already knew something about.

Employed VTC graduates' job duration in months (job start to current date)		
Mean		8.15
95% Confidence Interval for Mean	Lower Bound	7.25
	Upper Bound	9.06
5% Trimmed Mean		7.86
Median		7

C. Percent of graduates currently employed in the area of their study earning a living wage.

Eighty-five percent of employed VTC graduates work in their area of training. Are these employed graduates that work in their area of training earning a living wage? We extrapolated from the CFSVA study and the IHSES to estimate that a “living wage” is achieved when per capita income is more than 70,000 ID per month. Calculated per capita income is derived from Question 6, Part IV of the survey instrument. In the table below it shows that more than 50% (the median value in the table) of the VTC graduates did not reach the “living wage” benchmark. We would conclude that most of the VTC graduates working in their area of expertise are not earning a living wage (i.e., they are food insecure), and therefore are likely to be dependent on the PDS to supplement needed food.

Per capita monthly income (Iraqi Dinar)			
	A	V	Total
Mean	164253	89692	104066
Percentile 25	45000	48000	48000
Median	86667	60000	64000
Percentile 75	291667	100000	120000

Seen in the table above is the average per capital income difference between VTC graduates and Apprentices employed in the area of their training. This difference is statistically significant at the .05 level using the F statistic. The similar table below reports participant’s monthly earnings. The IHSES preliminary estimates for age related average wage earnings gives a probable range of from 250,000 ID to 330,000 ID per month for wage earners between 15 and 35 years of age. This matches well with our survey estimates.

Monthly earnings (Iraqi Dinar)			
	A	V	Total
Mean	336250	294000	302145
Percentile 25	160000	240000	240000
Median	330000	300000	300000

Monthly earnings (Iraqi Dinar)			
	A	V	Total
Percentile 75	400000	360000	360000

D. Percent employed, but outside their area of study.

All but 11 (14%) of the employed VTC graduate respondents reported they were working in their area of study.

E. Percent that are underemployed (employed but in unskilled labor).

Underemployment due to employment as an unskilled worker was not indicated by the survey. Underemployment due to reduced hours of employment did occur. Thirty percent of those employed worked 30 hours or less during the seven days that preceded the survey.¹⁰

F. Belief that training helped graduates earn a living wage.

Most respondents entered the program to improve skills or increase their chances for a job. These categorical findings are reinforced by open-ended explanations of the categorical response.

Part 2 Q5: Why did you decide to participate in the vocational education program?			
	A	V	Total
To improve my skills	46 55%	94 54%	140 54%
To increase my chance for a job	27 32%	55 32%	82 32%
To get a job in this location	4 5%	11 6%	15 6%
To make some money while I looked for work	7 8%	14 8%	21 8%
Total	84 100%	174 100%	258 100%

Overwhelmingly the respondents thought that the skills learned were useful to the workplace. This is reinforced by the high percentage of those who found employment using the skill they learned.

¹⁰ Working fewer than 6 hours per day is considered part-time work.

Part 2 Q7: In your opinion, did you have enough skills and training when you completed the course to be useful to the workplace?			
	A	V	Total
Yes	80 95%	166 95%	246 95%
No	4 5%	8 5%	12 5%
Total	84 100%	174 100%	258 100%

G. Did the training enhance the graduates life or contribute in a meaningful way to earning a living?

Yes, 85% of those who found employment did so in the area of their training.

H. Do graduates realize any income from the skills learned in the vocational training?

Yes, graduates did realize income from the skills they learned. Caveats are that some of them were already working in the area of their skill before they began training.

I. Relevancy of the training to the needed skills for area of study.

Virtually all respondents said that the training was worthwhile.

Part 2 Q12: Do you think the training received was worthwhile?			
	A	V	Total
Yes	84 100%	173 99%	257 100%
No	0 0%	1 1%	1 0%
Total	84 100%	174 100%	258 100%

In their open-ended responses that validated the categorical response, many referred to the opportunity they believed they have to earn money or start a business. It was common for those trained to state that they now felt themselves to be skilled in their field of training. Quotations below are from responses to Part II, Question 8.

- “I learned motor winding of various motors and I can get a career now.”
- “It added a lot of skills to my past experience.”
- “The training was fair enough and I *use it in my work.*”
- “I have very good skills now (*word deleted*) beneficial in my work in addition to my previous skills in this field.”

Responses to SOW questions about apprentices.

J. Employment rate for apprentices.

Twenty-nine per cent of apprentices were currently engaged in any type of work that earned money. The same procedure for identifying current employment was followed for apprentices as was done for VTC graduates. Apprentices have a lower employment rate than for VTC graduates. This can partially be due to the longer average period that VTC graduates have been in the job market (10 months) than have Apprentices (7 months).

Currently engaged in any type of work?	A	V	Total
Yes, currently supporting myself	24 29%	80 46%	104 40%
No, not doing any kind of work to make money	60 71%	94 54%	154 60%

K. Comparing apprentice and VTC graduates employment rates.

Logistic regression was used to reject the null hypothesis that employment rates between VTC graduates and apprentices was the same. VTC have a higher employment rate, but have greater underemployment and earn less.

L. Are apprentices more employable than VTC graduates.

Based on the survey result apprentices are not more employable than VTC graduates.

M. Did the job after the apprenticeship result in earning a living wage?

For the most part apprentices did earn a living wage as we have defined it. Nevertheless about 30% of apprentices did not earn more than 70,000 ID per capita per month. The earning power of apprentices surpasses that of the VTC graduate.

Per capita monthly income (Iraqi Dinar)			
	A	V	Total

Per capita monthly income (Iraqi Dinar)			
	A	V	Total
Mean	164253	89692	104066
Percentile 25	45000	48000	48000
Median	86667	60000	64000
Percentile 75	291667	100000	120000

N. Apprentice employment outside their area of study.

Seventeen per cent of apprentices were working outside their area of study. No standard or benchmark has been established to assess this is acceptable. It would be surprising to find that all employment opportunities aligned with the vocational training received.

Work in area of training			
	A	V	Total
Yes	19	70	89
	83%	86%	86%
No	4	11	15
	17%	14%	14%
Total	23	81	104
	100%	100%	100%

O. Apprentice employment with the business that hosted the apprenticeship.

Half of the apprentices are still employed by businesses that hosted them as an apprentice. This expresses confidence in training program as the employer must have thought he was willing to pick up the 50% wage difference formerly provided by CSP.

Part 4 Q5: Are you still employed by the same business where you did your apprenticeship	
Yes	11 52%
No	10 48%
Total	21 100%

P. Post apprenticeship experience earning a living wage.

Yes, a majority of apprentices earned a living wage. See section D above.

Q. Former apprentice's belief that the apprenticeship enhanced their employability.

Despite the reality that most apprentices are not employed they believed that the apprenticeship improved their overall prospects for employment.

Part 4 Q20: Do you think the apprenticeship improved your overall prospect of employment?	
Yes	78 94%
No	5 6%
Total	83 100%

R. Had apprentices received the 50% matching salary provided by IRD?

In the study we included an assessment of the VTC stipend payments as well as the Apprentice stipend payments. To assess the VTC stipend Part II, Question 9 asked respondents how much they were paid while they were in the vocational education program. This was compared to VTC stipend amounts provided to us by CSP. The stipend amounts were in US dollars converted to Iraqi Dinar using the exchange rate of 1000 ID = \$1. The converted amount in ID approximates the VTC stipend in ID. The stipend amount was subtracted from the reported payment amount. A positive difference indicated that payments received at least equaled the stipend. Large negative differences flagged discrepancies that needed to be looked at individually. Negative differences found, and there were relatively few, ranged from the equivalent of \$5 to \$10 easily attributable to exchange rate differences. It was concluded that vocational education trainees had been paid at least the correct stipend amounts.

Stipends paid to apprentices are more complex. There is not a uniform stipend amount, but a variable amount depending on local market conditions. CSP provided a list of apprentice stipends by city and construction or non-construction trades. Fifty percent of that amount is reimbursed by CSP to the business owner. Payments to the business owner are done on a reimbursement basis only, supported by payment receipts and timesheets. The apprentice should receive the full amount unaware that 50% is paid by CSP to the business owner. We were informed to expect considerable variance within Baghdad in the amount of the stipend paid with differences from one area to another. A computer program allocated these referenced stipend amounts to the survey data. As

before, the stipulated stipend amounts were subtracted from the amounts respondents said they received as an apprentice.

The analysis found that 30% (25 cases) of the apprentices reported receiving less than the stipulated apprentice stipend amount. The majority of these cases are in Baghdad. Further, if you are a woman apprentice it seems you are 5 to 6 times more likely to be paid less than your stipulated stipend amount. In our data this appears to be a systematic problem, and therefore troubling. To verify this finding we went back to CSP to validate the documented stipend amounts actually paid to the specific individuals identified as receiving less than the stipulated amount. Concurrently, the field monitors went back to the same respondents to confirm the amounts they said they were paid during the apprenticeship (Part IV, Question 15). There is still room for error and misunderstanding in how the numbers were reported, but these findings need an explanation.

Logistic regression, testing the null hypothesis

The basis for the sample design was to have a large enough sample so that the null hypothesis could be tested. As stated above, the calculated sample size depended in part on assumptions about effect size. Effect sizes proved to be much different than assumed. Employment rate for VTC graduates is higher than it is for Apprentices. Despite these changes a test of the null hypothesis using logistic regression¹¹ did permit rejecting the null hypothesis that there is no difference in employment rates between Vs and As. Results of the logistic regression are explained next.

Logistic regression is an appropriate statistical tool to use when assessing the probability of employment or unemployment (or any other dichotomous variable). Logistic regression predicts the natural log of the odds or logit (see the glossary). Fortunately the relatively unfamiliar term logit can be transformed back into a more familiar reference of the odds of an event occurring. The survey data were subjected to a test of the null hypothesis using logistic regression. Employment (current employment) was indicated as described in the section above. For the initial test a dummy variable was configured that assigns a "1" for an apprentice and "0" for a VTC graduate. What we look for is whether our ability to predict the outcome dependent variable (employment) is influenced by the independent variable.

Using SPSS Logistic Regression to predict the log odds of employment based on the V (0) or A (1) classification provides the following regression model. The Wald statistic tests for the significance of the B. In this case it finds the parameters significant. The $\text{Exp}(B)$ ¹² is the odds ratio and tells us that the odds of being an employed apprentice is .470 times the odds of a being an employed VTC graduate. The Wald statistic tells us that $\text{Exp}(B)$ is statistically different from 1. If the odds were not statistically different from

¹¹ Logistic regression using categorical independent variables was the analytical model used to develop the sample size requirements.

¹² To explain the parameters in terms of odds ratios rather than log odds ratio it is necessary to exponentiate B that is the log odds or logit.

1 there would be no statistical difference demonstrated in the employment rates between Vs and As.

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1 ^a VorA_Interview(1)	-.755	.285	6.997	1	.008	.470	.269	.822
Constant	.916	.242	14.393	1	.000	2.500		

a. Variable(s) entered on step 1: VorA_Interview.

This simple regression model is used to reject the null hypothesis. However, the model is not adequate to explain the variance, and according to a logistic regression R^2 equivalent (Nagelkerke R^2) this model explains just about 4% of the variance. It is therefore clear that other factors need to be added to the equation to improve its ability to explain employment. Examples of other variables to be added would be the type of training provided, education level, age, gender, and the duration since VTC training or an Apprenticeship.¹³

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	340.597 ^a	.028	.038

a. Estimation terminated at iteration number 3 because parameter estimates changed by less than .001.

¹³ If requested MEPP II can examine these additional variables. Preliminary analysis shows that sex, age and education all are equally important contributors in determining employment.

Annex IX . Glossary of Terms Used in the Analysis

Alpha: Alpha is the criterion required to establish statistical significance. Assuming that the null is true, alpha is also the proportion of studies expected to result in a Type I error.

Area of study: in this report this means the grouping of vocational education courses into seven study areas: 1) automotive, 2) carpentry, 3) construction, 4) electronics, 5) maintenance, 6) metal work/fabrication, 7) sewing (tailoring).

Confidence interval: Interval that will include the population parameter in a known proportion of all possible studies. "All possible studies means" that if you repeated the study a number of times (drawing a new random sample each time) the outcome of those studies would be within the confidence interval 90% of the time . Technically, this is 1-alpha. The confidence interval is the probability of correctly concluding that there is no treatment effect. We are confident that 90% of the time our estimate will be within the interval defined by two times the standard error.

Confidence level: A level of certainty for the confidence interval - the proportion of studies in which the confidence interval is expected to include the population parameter. In practice this is 1- alpha (see above).

Effect Size: The magnitude of the effect - for example the standard difference in means (for a t-test). Power analysis works with the effect size, which is independent of sample size. Significance tests combined the observed effect with the sample size to yield a combined test statistic. In this study effect size is the expected differences in rates of employment between apprentices and vocational education graduates.

Logistic regression: a type of regression where the dependent variable (the predicted variable) has a binary outcome (a successful business or an unsuccessful one). Normal regression is founded on linear relationships among the variables that include assumptions about the normal distribution of errors. The use of variables with binary outcomes in normal regression violates these expected assumptions. Statisticians have found that when binary variables are transformed using the logit or logistic function the inclusion of binary outcome variables can be accommodated in regression equations. The name "logistic regression" refers to regression where these types of transformations have been used; more generally to regression that predicts a binary outcome.

Null hypothesis: Power analysis focuses on the study's potential for rejecting the null hypothesis. In most cases the null hypothesis is the null hypothesis of no effect For example, this study tests the null hypothesis that there is no difference in the rates of employment between apprentices and vocational education graduates who did not do an apprenticeship. The study attempts to disprove (reject) the null hypothesis and thereby show that the alternative proposition that different areas of study are more successful in achieving employment is accepted with stated confidence.

Odds: the likelihood of an occurrence relative to the likelihood of a nonoccurrence. In this study it is the likelihood of business success relative to the likelihood of business failure. Odds refer to a ratio of probabilities. Odds ratios, are referred to in logistic regression and in contingency table analysis, these are the comparison of odds rather

than probabilities.

Power of a study design: Power is the proportion of studies that will yield a statistically significant effect (assuming the effect size, sample size, and criterion alpha specified in the study design). When designing a study to test the null hypothesis the study design should ensure, to a high degree of certainty, that the study will be able to provide an adequate (i.e. powerful) test of the null hypothesis. A rule of thumb is that the power of a study design should be 0.8 or more (assuming the effect size, sample size, and criterion alpha specified in the study design).

P-value: In this study we are looking for P-values greater than 0.1. The estimate of the probability for a test of the hypothesis. Usually the p value is compared to the significance level when testing the hypothesis. If the p-value exceeds the designated significance level the alternative hypothesis is accepted; if it does not, the null hypothesis is accepted.

Quasi-experimental design: Research designs that have several of the key features of randomized experimental designs, such as pre-post measurement and treatment-control group comparisons, but lack random assignment to a treatment group. The study design used here is quasi-experimental.

Factorial design: One model for experimental design. In general a factorial design is used to look at a variety of program variations to see which works best. In factorial design groups are defined by the major variables of interest: in this case the main variables of interest are type of training received and apprenticeships. The purpose of the design is to compare the main effects and the interactions effects of the factors. In order to make statistical inferences about the comparative differences between the factors we need to determine how large the sample should be in each of the groups.

Random assignment: Process of assigning the sample into two or more subgroups by chance (businesses studied were not randomly assigned to the different economic sector and grant size groups this was a precondition not under the control of the study).

Random selection: Process or procedures ensuring that the businesses selected for the sample in each factorial group were selected by chance.

Sample design: Interviewing all the grant awardees to achieve study objectives is both expensive and not necessary. Selecting a random sample of subjects within each group can provide an estimate of the study parameters according to a desired precision and confidence level. The sample design calculates the necessary sample size that will achieve the desired precision and confidence level.

Significance level: the notion that a statistical result could be considered significant if it could be shown that the probability of the result being due to chance alone was 5 % or less (or 1% or 10%).

Statistical significance: The statistical significance of a result is the probability that the observed relationship (e.g., between variables) or a difference (e.g., between means) in a sample occurred by pure chance ("luck of the draw"), and that in the population from which the sample was drawn, no such relationship or differences exist. Using less

technical terms, one could say that the statistical significance of a result tells us something about the degree to which the result is "true" (in the sense of being "representative of the population"). More technically, the value of the p-value represents a decreasing index of the reliability of a result. The higher the p-value, the less we can believe that the observed relation between variables in the sample is a reliable indicator of the relation between the respective variables in the population. (source: Statsoft Electronic Textbook).

Study domain: a study domain is a segment identified in the overall statistical plan as one for which a certain level of detail and certain data reliability are required. In this special BDP study the factorial group and the study domain are interchangeable. Eight study domains were identified for the Votech and Apprentice special study.

Type I Error: The error committed when the true effect is null but the study yields a significant p-value and leads the researcher (in error) to reject the null. With alpha set at .05, a type I error would be expected in 5% of trials in which the null is true. A type I error is sometimes referred to as a false positive.

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