

September 2018

LABOR MARKET ANALYSIS

Office Technology/Office Computer Applications



TABLE OF CONTENTS

SUMMARY	3
INTRODUCTION	4
OCCUPATIONAL DEMAND	8
WAGES	8
JOB POSTINGS	10
SKILLS.....	12
SOFTWARE SKILLS.....	12
SKILL CLUSTER PROJECTIONS	13
CERTIFICATIONS	13
EDUCATION, WORK EXPERIENCE AND TRAINING	14
STUDENT OUTCOMES	16
CONCLUSION	16
RECOMMENDATION	16
APPENDIX A: METHODOLOGY & DATA SOURCES.....	17

SUMMARY

This study conducted by the Central Valley/Mother Lode Center of Excellence examines labor market demand, wages, skills and community college supply for occupations related to TOP title-code office technology/office computer applications-051400 for Modesto Junior College. Seven occupations were identified:

- Procurement Clerks (SOC 43-3061);
- Cargo and Freight Agents (SOC 43-5011);
- Executive Secretaries and Executive Administrative Assistants (SOC 43-6011);
- Secretaries and Administrative Assistants, Except Legal, Medical, and Executive (SOC 43-6014);
- Data Entry Keyers (SOC 43-9021);
- Word Processors and Typists (SOC 43-9022); and
- Office Clerks, General (SOC 43-9061).

KEY FINDINGS:

- **Occupational demand** — The largest occupation is office clerks (general) having 11,591 workers in 2017 and a 5% projected growth rate over the next five years, with 543 annual openings. The next largest occupation is secretaries and administrative assistants (except legal, medical and executive) with 8,565 jobs in 2017, a 2% growth rate and 189 annual openings.
- **Wages** — The entry-level wages for all seven occupations exceed the average self-sufficiency wage for a single adult in the subregion, \$10.29/hour. However, the entry-level wages of office clerks (general) barely exceed the average self-sufficiency wage and fall below the current average living wage for a single adult in the subregion, \$11.02/hour.
- **Employers** — Top employers in the region include regional unified school districts and California State University, Stanislaus.
- **Job titles** — The most common occupational title in job postings is secretaries and administrative assistants (except legal, medical and executive). The most common job title is administrative assistant.
- **Skills and certifications** — The top baseline skill is typing, the top specialized skill is administrative support, and the top software skill is Microsoft Excel. The most in-demand certification is a typing certification.
- **Education** — The typical education required for the seven occupations is a high school diploma with various levels of on-the-job training.
- **Supply** — Analysis of community college completions in the region shows that on average 19 non-credit awards, 127 certificates and 58 degrees were conferred in the Central Valley/Mother Lode region each year.

Based on a comparison of occupational demand and community college supply, there is a substantial undersupply of 2,759 trained workers in the subregion and 7,028 trained workers in the region. The Center of Excellence recommends that Modesto Junior College work with the region's business deputy sector navigator, the college's advisory board and local industry in the expansion of its office technology/office computer applications program.

INTRODUCTION

The Central Valley/Mother Lode Center of Excellence was asked by Modesto Junior College to provide labor market information for computer applications set of courses. Review of the Taxonomy of Programs revealed that Office Technology/Office Computer Applications-051400 was the appropriate program for this evaluation, which was confirmed by the requestor. The geographical focus for this report is the North Central Valley/Northern Mother Lode (NCV/NML) subregion, but regional demand and supply data has been included for broader applicability and use.

Analysis of the program and occupational data related to office technology/office computer applications resulted in the identification of seven applicable occupations. The Standard Occupational Classification (SOC) System titles and codes are:

- Procurement Clerks (SOC 43-3061);
- Cargo and Freight Agents (SOC 43-5011);
- Executive Secretaries and Executive Administrative Assistants (SOC 43-6011);
- Secretaries and Administrative Assistants, Except Legal, Medical and Executive (SOC 43-6014);
- Data Entry Keyers (SOC 43-9021);
- Word Processors and Typists (SOC 43-9022); and
- Office Clerks, General (SOC 43-9061).

The SOC codes, occupational titles, job descriptions, sample job titles, and knowledge and skills from the Bureau of Labor Statistics and O*NET OnLine are shown in Exhibit 1.

EXHIBIT 1. Office technology-related SOC titles, job descriptions, sample job titles, and knowledge and skills

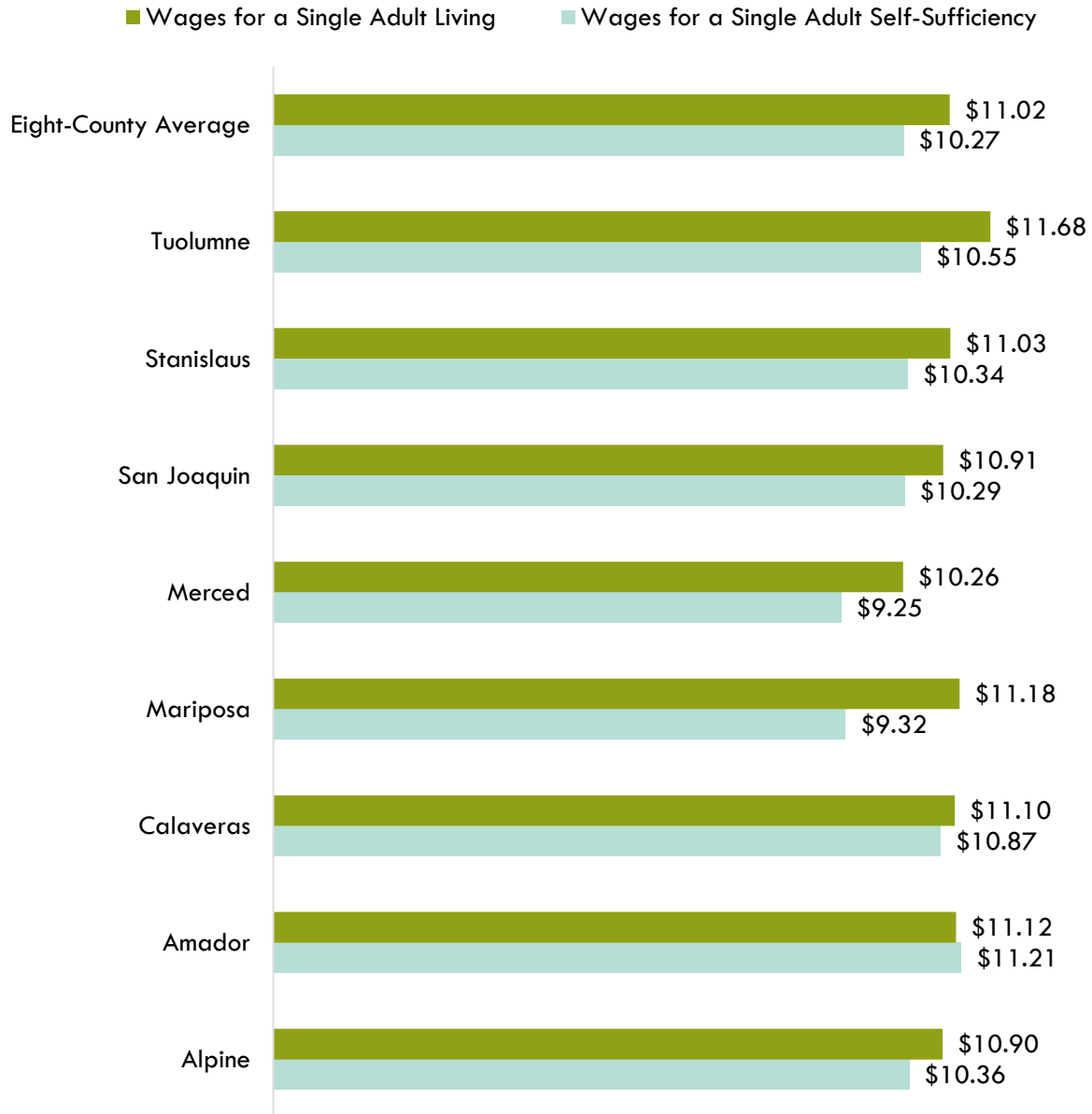
SOC TITLE & CODE	DESCRIPTION	SAMPLE JOB TITLES	KNOWLEDGE & SKILLS
Procurement Clerks (SOC 43-3061)	Compile information and records to draw up purchase orders for procurement of materials and services.	Buyer, Procurement Assistant, Procurement Officer, Procurement Specialist, Procurement Technician, Purchasing Assistant, Purchasing Associate, Purchasing Clerk, Purchasing Specialist, Warehouse Clerk	Knowledge Clerical Customer and personal service Administration and management English language Education and training Skills Reading comprehension Speaking Active listening Writing Complex problem solving
Cargo and Freight Agents (SOC 43-5011)	Expedite and route movement of incoming and outgoing cargo and freight shipments in	Cargo Agent, Documentation Clerk, Drop Shipment Clerk, Freight Broker,	Knowledge Transportation Customer and personal service

SOC TITLE & CODE	DESCRIPTION	SAMPLE JOB TITLES	KNOWLEDGE & SKILLS
	airline, train, and trucking terminals, and shipping docks. Take orders from customers and arrange pickup of freight and cargo for delivery to loading platform. Prepare and examine bills of lading to determine shipping charges and tariffs.	Intermodal Dispatcher, International Coordinator, Load Planner, Logistics Coordinator, Logistics Service Representative, Operations Manager	English language Geography Public safety and security Skills Speaking Active listening Critical thinking Monitoring Service orientation
Executive Secretaries and Executive Administrative Assistants (SOC 43-6011)	Perform routine clerical and administrative functions such as drafting correspondence, scheduling appointments, organizing and maintaining paper and electronic files, or providing information to callers.	Administrative Assistant, Administrative Associate, Administrative Secretary, Administrative Specialist, Administrative Technician, Clerk Typist, Department Secretary, Office Assistant, Secretary, Staff Assistant	Knowledge Clerical English language Customer and personal service Computers and electronics Administration and management Skills Writing Active listening Reading comprehension Speaking Time management
Secretaries and Administrative Assistants, Except Legal, Medical and Executive (SOC 43-6014)	Perform routine clerical and administrative functions such as drafting correspondence, scheduling appointments, organizing and maintaining paper and electronic files, or providing information to callers.	Administrative Assistant, Administrative Associate, Administrative Secretary, Administrative Specialist, Administrative Technician, Clerk Typist, Department Secretary, Office Assistant, Secretary, Staff Assistant	Knowledge Clerical English language Customer and personal service Computers and electronics Administration and management Skills Writing Active listening Reading comprehension Speaking Time management
Data Entry Keyers (SOC 43-9021)	Operate data entry device, such as keyboard	Data Capture Specialist, Data Entry	Knowledge English language

SOC TITLE & CODE	DESCRIPTION	SAMPLE JOB TITLES	KNOWLEDGE & SKILLS
	or photo composing perforator. Duties may include verifying data and preparing materials for printing.	Clerk, Data Entry Machine Operator, Data Entry Operator, Data Entry Specialist, Data Transcriber, Fiscal Assistant, Records Clerk, Typist, Underwriting Support Specialist	Clerical Customer and personal service Law and government Skills Reading comprehension Active listening Monitoring Time management Writing
Word Processors and Typists (SOC 43-9022)	Use word processor, computer or typewriter to type letters, reports, forms, or other material from rough draft, corrected copy, or voice recording. May perform other clerical duties as assigned.	Clerk Specialist, Clerk Typist, Keyboard Specialist, Management Services Technician, Office Technician, Principal Clerk Typist, Project Assistant, Stenographer, Typist, Word Processor	Knowledge Clerical English language Customer and personal service Computers and electronics Skills Reading comprehension Active listening Writing Monitoring Speaking
Office Clerks, General (SOC 43-9061)	Perform duties too varied and diverse to be classified in any specific office clerical occupation, requiring knowledge of office systems and procedures. Clerical duties may be assigned in accordance with the office procedures of individual establishments and may include a combination of answering telephones, bookkeeping, typing or word processing, stenography, office machine operation, and filing.	Administrative Clerk (Admin Clerk), Clerical Aide, Clerical Assistant, Clerk, General Clerk, Office Assistant, Office Clerk, Office Coordinator, Office Services Specialist, Office Support Assistant	Knowledge Clerical English language Customer and personal service Administration and management Skills Active listening Reading comprehension Speaking Writing Coordination

The 2014 average self-sufficiency wage for a single adult in the North Central Valley/Northern Mother Lode (NCV/NML) subregion is \$10.27/hour, and the current average living wage for a single adult is \$11.02/hour. Self-sufficiency and living wage data by county and the overall eight-county average are shown in Exhibit 2. In the wages sections of this report, Pct.10 hourly denotes entry-level wages, and median represents experienced wages.

EXHIBIT 2. Self-sufficiency and living wages in the NCV/NML subregion



OCCUPATIONAL DEMAND

The subregion employed 23,374 workers in office technology-related occupations in 2017 in the North Central Valley/Northern Mother Lode subregion (Exhibit 3). The largest occupation is office clerks (general) with 11,591 workers in 2017. This occupation is projected to increase by 5% over the next five years and has the greatest number of projected annual openings, 543. The next largest occupation is secretaries and administrative assistants (except legal, medical and executive) with 8,565 jobs in 2017. This occupation is projected to slightly grow by 2% over the next five years and will have 989 annual openings.

EXHIBIT 3. Office technology-related employment and occupational projections in the NCV/NML subregion

OCCUPATION	2017 JOBS	5-YEAR CHANGE	5-YEAR % CHANGE	ANNUAL OPENINGS
Office Clerks, General	11,591	543	5%	1,492
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	8,565	189	2%	969
Executive Secretaries and Executive Administrative Assistants	1,482	(25)	(2%)	162
Data Entry Keyers	804	(50)	(6%)	92
Word Processors and Typists	517	(46)	(9%)	56
Procurement Clerks	274	7	3%	31
Cargo and Freight Agents	142	36	25%	20
TOTAL	23,374	655	3%	2,822

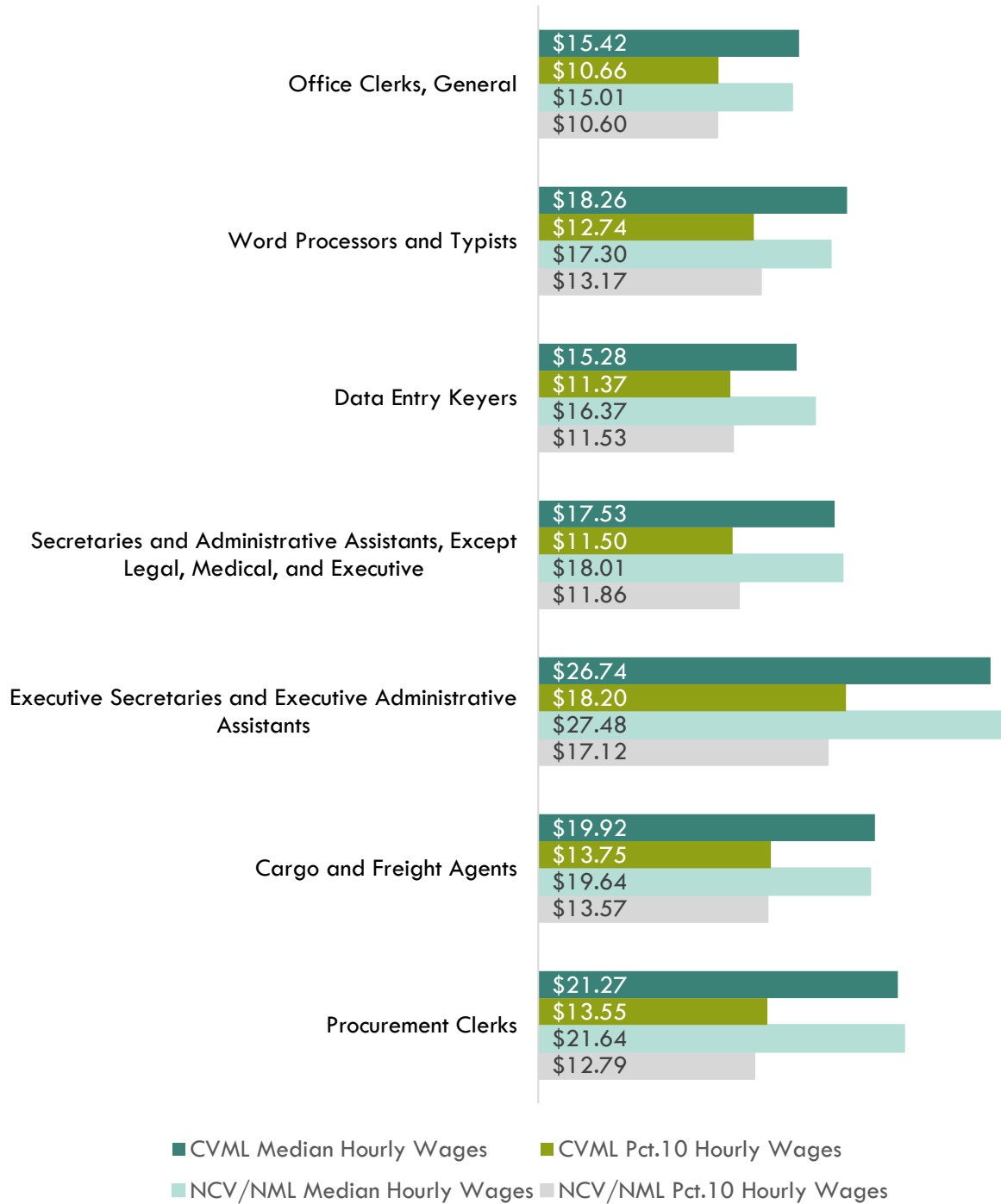
WAGES

Exhibit 4 compares the entry-level and experienced wages of the seven office technology-related occupations.

The entry-level wages for all seven occupations exceed the average self-sufficiency wage for a single adult in the subregion, \$10.29/hour. However, the entry-level wages of office clerks (general) barely exceed the average self-sufficiency wage and fall below the current average living wage for a single adult in the subregion, \$11.02/hour.

In addition, entry-level wages for data entry keyers are only slightly above the subregion's average living wage. The highest paid occupation is executive secretaries and administrative assistants.

EXHIBIT 4. Office technology-related entry-level and experienced wage comparison in the region and subregion



JOB POSTINGS

There were 1,843 job postings for the seven occupations in the North Central Valley/Northern Mother Lode subregion from September 2017 through August 2018. The top employers advertising these job postings are listed in Exhibit 5.

EXHIBIT 5. Top employers of office technology-related occupations by number of job postings

EMPLOYER	JOB POSTINGS
Modesto City Schools	58
Ceres Unified School District	49
California State University, Stanislaus	34
Turlock Unified School District	28
Stockton Unified School District	27
The Home Depot Incorporated	27
Lodi Unified School District	26
State of California	26
University of the Pacific	25
Modesto Junior College	24

Exhibit 6 shows how job postings for the seven targeted office technology-related occupations in the subregion are distributed across several O*NET OnLine occupations. The majority of job postings, 920 in total, use the occupational title secretaries and administrative assistants (except legal, medical and executive).

EXHIBIT 6. Office technology-related occupational titles in job postings

OCCUPATIONAL TITLE & CODE	JOB POSTINGS
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive (43-6014.00)	920
Office Clerks, General (43-9061.00)	491
Data Entry Keyers (43-9021.00)	151
Executive Secretaries and Executive Administrative Assistants (43-6011.00)	104
Word Processors and Typists (43-9022.00)	92
Cargo and Freight Agents (43-5011.00)	49
Procurement Clerks (43-3061.00)	36

JOB TITLES

Analysis of the 12 advertised job titles for the targeted occupations reveals the top title is administrative assistant, occurring in 463 job postings, followed by office assistant, 150 job postings (Exhibit 7).

EXHIBIT 7. Top office technology-related job titles by number of job postings

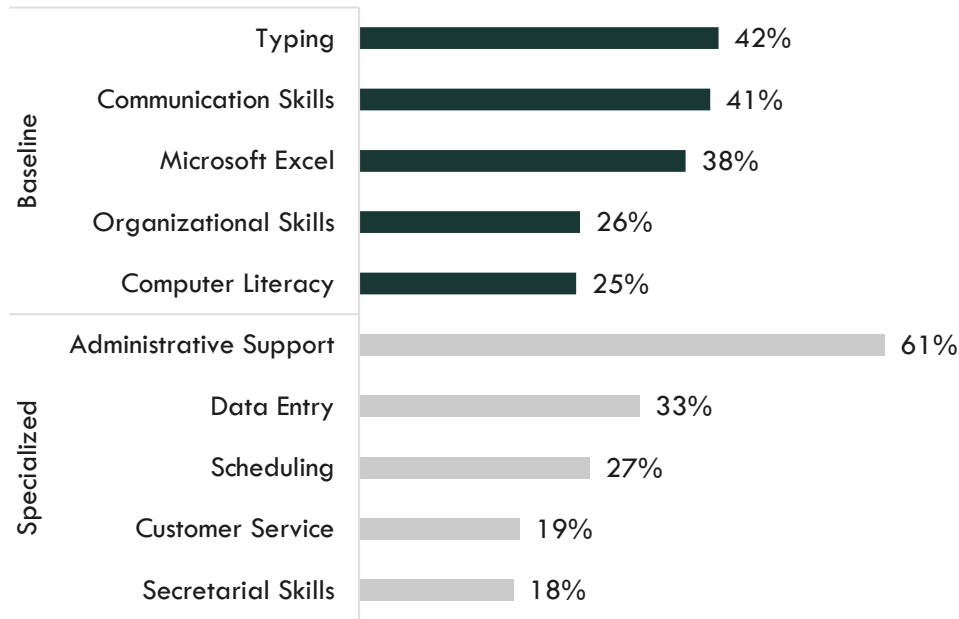
JOB TITLE	JOB POSTINGS
Administrative Assistant	463
Office Assistant	150
Secretary	81
Executive Assistant	71
Data Entry Clerk	59
School Secretary	59
Office Clerk	56
Office Technician	53
Typist	52
Student Assistant	39



SKILLS

Exhibit 8 depicts the top baseline and specialized skills for the seven targeted office technology/office computer applications occupations. Approximately 1,500 job postings contain skills data. Of these job postings, the three most important baseline skills are typing, 42% of job postings, communication skills, 41%, and Microsoft Excel, 38%. The top three specialized skills are administrative support, 61% of job postings, data entry, 33%, and scheduling, 27%.

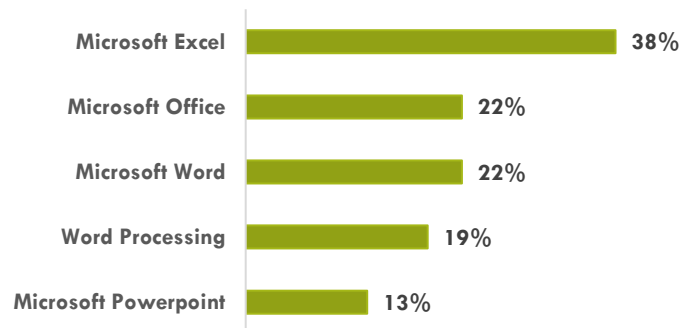
EXHIBIT 8. Office technology-related in-demand baseline and specialized skills



SOFTWARE SKILLS

Analysis also took into account the software skills most in demand by employers. Microsoft Excel and Microsoft Office rank first and second (Exhibit 9).

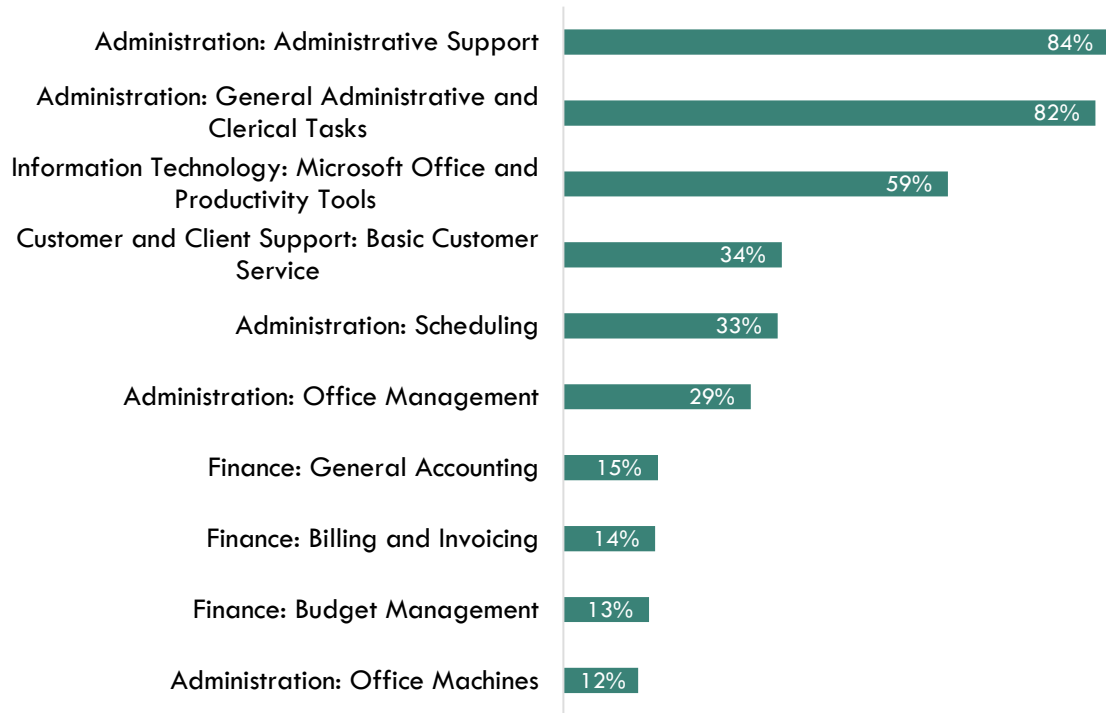
EXHIBIT 9. Office technology-related in-demand software skills



SKILL CLUSTER PROJECTIONS

About 68% of the 1,843 job postings, a total of 1,258 job postings, contain skill projections. An evaluation of the top skill clusters that will have the greatest gains in level of importance shows that the top areas are administration: administrative support (84%); administration: general administration and clerical tasks (82%); and information technology: Microsoft Office and productivity tools (59%) (Exhibit 10).

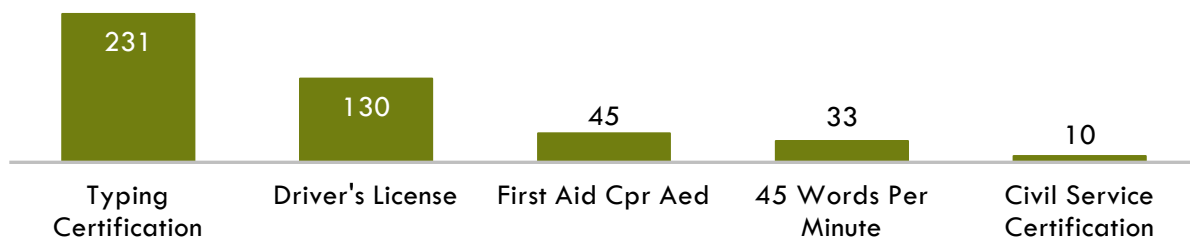
EXHIBIT 10. Skill cluster projections for office technology-related occupations



CERTIFICATIONS

Of the postings with certification data, 231 indicated a need for a typing certification. The next two top certifications are driver's license and first aid (Exhibit 11). (Note: 78% of records were excluded because they did not include a certification. As a result, the chart below is not representative of the full sample.)

EXHIBIT 11. Office technology-related certifications requested in job postings



EDUCATION, WORK EXPERIENCE AND TRAINING

The typical entry-level education for all seven occupations related to office technology/office computer applications is a high school diploma. Most occupations also typically require either short-term or moderate-term on-the-job training (Exhibit 12).

However, these occupations also qualify as relevant to community colleges due to one or more of the following requirements:

- Specialized industry knowledge, and
- Performance of duties that are taught through programs offered by local community colleges.

EXHIBIT 12. Education, work experience, training and Current Population Survey results for office technology-related occupations¹

OCCUPATION	TYPICAL ENTRY-LEVEL EDUCATION	WORK EXPERIENCE REQUIRED	TYPICAL ON-THE-JOB TRAINING	CPS
Procurement Clerks	High school diploma or equivalent	None	Moderate-term	34.8%
Cargo and Freight Agents	High school diploma or equivalent	None	Short-term	48.3%
Executive Secretaries and Executive Administrative Assistants	High school diploma or equivalent	Less than 5 years	None	47.0%
Secretaries and Administrative Assistants, Except Legal, Medical and Executive	High school diploma or equivalent	None	Short-term	47.0%
Data Entry Keyers	High school diploma or equivalent	None	Short-term	46.5%
Word Processors and Typists	High school diploma or equivalent	None	Short-term	46.4%
Office Clerks, General	High school diploma or equivalent	None	Short-term	44.7%

¹ "Labor Force Statistics from the Current Population Survey," Bureau of Labor Statistics, <https://www.bls.gov/cps/>.

SUPPLY

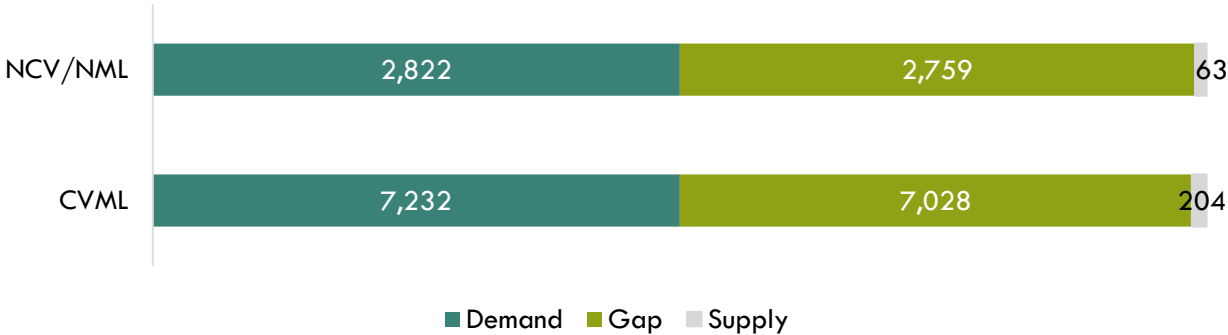
Analysis of California Community Colleges Chancellor’s Office Curriculum Inventory (COCI) program data shows there are 11 community colleges in the region offering office technology programs contributing to workforce supply for the identified occupations in the TOP code Office Technology/Office Computer Applications-051400. Analysis of the last three years of TOP code data, from 2014 through 2017, shows that, on average, 19 non-credit awards, 127 certificates and 58 degrees were conferred in the Central Valley/Mother Lode region each year (Exhibit 13).

EXHIBIT 13. Community college supply for office technology-related occupations in the subregion and region

TOP TITLE-CODE	COLLEGE	2014-17 AVE ANNUAL AWARDS			
		NON-CREDIT	CERTIFICATE	DEGREE	TOTAL
Office Technology/Office Computer Applications-051400	Bakersfield		14	4	18
	Cerro Coso		11	2	13
	Columbia		3	1	3
	Fresno City	19	23	6	48
	Merced		14	17	31
	Modesto Junior		7	8	15
	Reedley		34	6	41
	San Joaquin Delta		14		14
	Sequoias		1	5	6
	Taft		2	4	5
	West Hills Coalinga		5	4	9
		TOTAL	19	127	58

A substantial undersupply of office technology/office computer applications workers appears to exist in the region and subregion. In the subregion, there is a shortage of 2,759 trained workers. In the region, the shortage is 7,028 trained workers (Exhibit 14).

EXHIBIT 14. Office technology-related workforce annual demand and supply in the subregion and region



STUDENT OUTCOMES

Exhibit 15 summarizes employment and wage outcomes for the related program TOP code based on the Chancellor’s Office Datamart system and California’s employment development department unemployment insurance data. Across the region, course enrollments totaled 8,231 and 174 students received a degree or certificate. Nearly the same number transferred, 177 students. More than 60% were employed in the second fiscal quarter after exiting the program, and 40% attained a living wage.

Exhibit 15: Office technology metrics, Central Valley/Mother Lode Region ²

METRIC	051400-OFFICE TECHNOLOGY/OFFICE COMPUTER APPLICATIONS
Course Enrollments	8,231
Students Who Got a Degree or Certificate	174
Number of Students Who Transferred	177
Employed in the Second Fiscal Quarter after Exit	64% (n=617)
Attained a Living Wage	40% (n=359)

CONCLUSION

The entry-level wages for all seven occupations exceed the average self-sufficiency wage for a single adult in the subregion, \$10.29/hour. However, the entry-level wages of office clerks (general) barely exceed the average self-sufficiency wage and fall below the current average living wage for a single adult in the subregion, \$11.02/hour.

There were 1,843 job postings in the past 12 months for occupations related to office technology/office computer applications in the North Central Valley/Northern Mother Lode subregion.

Analysis of skills and certificate requirements in job postings indicates:

- The top baseline skill is typing, and the top specialized skill is administrative support.
- The top software skill is Microsoft Excel.
- The top certification is a typing certification.

² The Career and Technical Education Outcomes Survey (CTEOS) is a survey of former students in career education programs, conducted one year after they exited the California Community Colleges. Students either earned an award or completed at least nine units in the same 2-digit TOP code. <https://cteos.santarosa.edu/>

There are 11 community colleges in the region offering programs contributing to workforce supply for occupations related to office technology/office computer applications. However, there is an undersupply of trained workers, a shortage of 2,759 in the subregion and 7,028 in the region.

RECOMMENDATION

Based on these findings, it is recommended that Modesto Junior College work with the region's business deputy sector navigator, the college's advisory board and local industry in the expansion of its office technology/office computer applications program.



APPENDIX A: METHODOLOGY & DATA SOURCES

Data Sources

Labor market and educational supply data compiled in this report derive from a variety of sources. Data were drawn from external sources, including the Economic Modeling Specialists, Inc., the California Community Colleges Chancellor's Office Management Information Systems Data Mart and the National Center for Educational Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS). Below is the summary of the data sources found in this study.

Data Type	Source
Labor Market Information/Population Estimates and Projections/Educational Attainment	Economic Modeling Specialists, Intl. (EMSI). EMSI occupational employment data are based on final EMSI industry data and final EMSI staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level EMSI earnings by industry: economicmodeling.com .
Living Wage	A living wage calculator that estimates the cost of living in a specific community or region: livingwage.mit.edu .
Typical Education Level and On-the-job Training	Bureau of Labor Statistics (BLS) uses a system to assign categories for entry-level education and typical on-the-job training to each occupation for which BLS publishes projections data: www.bls.gov/emp/ep_education_tech.htm .
Labor Force, Employment and Unemployment Estimates	California Employment Development Department, Labor Market Information Division, labormarketinfo.edd.ca.gov
Job Posting and Skills Data	Burning Glass, http://www.burning-glass.com/
Additional Education Requirements/ Employer Preferences	The O*NET Job Zone database includes over 900 occupations as well as information on skills, abilities, knowledge, work activities and interests associated with specific occupations: www.onetonline.org

Key Terms and Concepts

Annual Job Openings: Annual openings are calculated by dividing the number of years in the projection period by total job openings.

Education Attainment Level: The highest education attainment level of workers age 25 years or older.

Employment Estimate: The total number of workers currently employed.

Employment Projections: Projections of employment are calculated by a proprietary Economic Modeling Specialists, Intl. (EMSI) formula that includes historical employment and economic indicators along with national, state and local trends.

Living Wage: The cost of living in a specific community or region for one adult and no children. The cost increases with the addition of children.

Occupation: An occupation is a grouping of job titles that have a similar set of activities or tasks that employees perform.

Percent Change: Rate of growth or decline in the occupation for the projected period; this does not factor in replacement openings.

Replacements: Estimate of job openings resulting from workers retiring or otherwise permanently leaving an occupation. Workers entering an occupation often need training. These replacement needs, added to job openings due to growth, may be used to assess the minimum number of workers who will need to be trained for an occupation.

Total Job Openings (New + Replacements): Sum of projected growth (new jobs) and replacement needs. When an occupation is expected to lose jobs, or retain the current employment level, number of openings will equal replacements.

Typical Education Requirement: represents the typical education level most workers need to enter an occupation.

Typical On-The-Job Training: indicates the typical on-the-job training needed to attain competency in the skills needed in the occupation.

Wages Family Compositions: The living wage calculator estimates the living wage needed to support families. For single adult families, the adult is assumed to be employed full time. For two adult families where both adults are in the labor force, both adults are assumed to be employed full time. For two adult families where one adult is not in the labor force, one of the adults is assumed to be employed full time while the other non-wage-earning adult provides full-time child care for the family's children. Full-time work is assumed to be year-round, 40 hours per week for 52 weeks, per adult. Families with one child are assumed to have a 'young child' (4 years old). Families with two children are assumed to have a 'young child' and a 'child' (9 years old). Families with three children are assumed to have a 'young child,' a 'child,' and a 'teenager' (15 years old).