Examine the labor market of San Bernardino County and its interactions with local industries.

UCR ENGAGEMENT
- Identify policy recommendations based on findings
- Provide a research framework as a foundation for an ongoing conversation among the workforce development ecosystem actors.
<table>
<thead>
<tr>
<th>GEOGRAPHY</th>
<th>Less than HS</th>
<th>HS/GED</th>
<th>Some College</th>
<th>Bachelor’s Degree</th>
<th>Graduate Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHINO, ONTARIO, RANCHO CUCAMONGA, &amp; UPLAND</td>
<td>16.4</td>
<td>21.5</td>
<td>34.1</td>
<td>18.8</td>
<td>9.1</td>
</tr>
<tr>
<td>CITY OF SAN BERNARDINO</td>
<td>31.8</td>
<td>27.2</td>
<td>29.0</td>
<td>8.8</td>
<td>3.2</td>
</tr>
<tr>
<td>FONTANA &amp; RIALTO</td>
<td>25.9</td>
<td>29.4</td>
<td>28.4</td>
<td>11.7</td>
<td>4.6</td>
</tr>
<tr>
<td>LOMA LINDA, REDLANDS, &amp; YUCAIPA</td>
<td>16.5</td>
<td>21.8</td>
<td>30.4</td>
<td>18.7</td>
<td>12.8</td>
</tr>
<tr>
<td>TWENTYNINE PALMS, VICTORVILLE, HESPERIA, &amp; LAKE ARROWHEAD</td>
<td>17.0</td>
<td>30.2</td>
<td>37.9</td>
<td>9.6</td>
<td>5.3</td>
</tr>
<tr>
<td>SAN BERNARDINO COUNTY TOTAL</td>
<td>20.1</td>
<td>25.9</td>
<td>33.1</td>
<td><strong>13.8</strong></td>
<td>7.1</td>
</tr>
<tr>
<td>LOS ANGELES</td>
<td>20.5</td>
<td>20.7</td>
<td>26.6</td>
<td>21.1</td>
<td>11.1</td>
</tr>
<tr>
<td>ORANGE</td>
<td>15.0</td>
<td>17.5</td>
<td>27.0</td>
<td>25.9</td>
<td>14.6</td>
</tr>
<tr>
<td>RIVERSIDE</td>
<td>17.5</td>
<td>27.8</td>
<td>32.6</td>
<td>14.4</td>
<td>7.7</td>
</tr>
<tr>
<td>CALIFORNIA</td>
<td>16.6</td>
<td>20.7</td>
<td>29.0</td>
<td>21.1</td>
<td>12.6</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, ACS 1-Year PUMS; Analysis by UCR Forecast Center
## Cost of Living Highlight

### Median Home Price by County

<table>
<thead>
<tr>
<th>County</th>
<th>Median Home Price</th>
<th>Monthly Mortgage Payment</th>
<th>Property Tax</th>
<th>Annual Cost of Ownership</th>
<th>Real Annual Cost</th>
<th>Wage Share of Cost (%)</th>
<th>Ave. Annual Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Los Angeles</td>
<td>614,832</td>
<td>3,036</td>
<td>6,148</td>
<td>42,583</td>
<td>40,502</td>
<td>66.0</td>
<td>64,564</td>
</tr>
<tr>
<td>Orange</td>
<td>774,292</td>
<td>3,824</td>
<td>7,743</td>
<td>53,627</td>
<td>51,006</td>
<td>85.5</td>
<td>62,732</td>
</tr>
<tr>
<td>Riverside</td>
<td>378,865</td>
<td>1,871</td>
<td>3,789</td>
<td>26,240</td>
<td>24,958</td>
<td>58.2</td>
<td>45,050</td>
</tr>
<tr>
<td>San Bernardino</td>
<td>304,895</td>
<td>1,506</td>
<td>3,049</td>
<td>21,117</td>
<td>20,085</td>
<td>44.7</td>
<td>47,212</td>
</tr>
<tr>
<td>San Diego</td>
<td>597,377</td>
<td>2,950</td>
<td>5,974</td>
<td>41,374</td>
<td>39,352</td>
<td>66.6</td>
<td>62,146</td>
</tr>
<tr>
<td>Ventura</td>
<td>623,979</td>
<td>3,081</td>
<td>6,240</td>
<td>43,217</td>
<td>41,104</td>
<td>79.6</td>
<td>54,322</td>
</tr>
</tbody>
</table>

Source: Core Logic, U.S. Bureau of Labor Statistics; Analysis by UCR Forecast Center
LABOR FORCE PARTICIPATION RATE DIFFERENCE
BY AGE GROUP, 2017, SAN BERNARDINO COUNTY VS. COMPARISON REGIONS

Source: U.S. Census Bureau, American Community Survey 1-Year PUMS; Analysis by UCR Forecast Center
IF SAN BERNARDINO COUNTY HAD THESE REGIONS’ LFPR INSTEAD
THEORETICAL NUMBER OF ADDITIONAL WORKERS

Source: U.S. Census Bureau, American Community Survey 1-Year PUMS; Analysis by UCR Forecast Center
LFPR, San Bernardino County, Ages 25-64

LFPR DOWN FOR ALL EDUCATIONAL ATTAINMENT GROUPS BUT MORE SEVERE FOR LESS EDUCATED PEOPLE

Source: U.S. Census Bureau, ACS 1-Year PUMS; Analysis by UCR Forecast Center
Integrated Industry Analysis

COUNTY RESIDENTS 5-YEAR (2017 VS. 2012)
EMPLOYMENT GROWTHS BY INDUSTRY AND SUBREGIONS

Source: Census Bureau, American Community Survey 1-Year PUMS; Analysis by UCR Forecast Center
Integrated Industry Analysis: Transportation

LOGISITCS - TRANSPORTATION EMPLOYMENT GROWTH
2010 - 2017

Source: Quarterly Census of Employment and Wages; Analysis by UCR Forecast Center
Integrated Industry Analysis: Transportation

LOGISTICS - TRANSPORTATION INDUSTRY:
OCCUPATIONAL PROFILE AND EDUCATIONAL ATTAINMENT COUNTY RESIDENTS, 2017

Source: Census Bureau, American Community Survey 1-Year PUMS; Analysis by UCR Forecast Center
Integrated Industry Analysis: Warehousing

LOGISTICS -
WAREHOUSE EMPLOYMENT GROWTH

Source: Quarterly Census of Employment and Wages.
Integrated Industry Analysis: Warehousing

TEMP HELP SERVICES WORKERS AS PERCENTAGE OF TOTAL PRIVATE EMPLOYMENT SAN BERNARDINO COUNTY VS. CALIFORNIA

Source: Census Bureau, American Community Survey 1-Year PUMS; Analysis by UCR Forecast Center
Integrated Industry Analysis: Manufacturing

MANUFACTURING
EMPLOYMENT GROWTH

Source: Quarterly Census of Employment and Wages.
Integrated Industry Analysis: Manufacturing

MANUFACTURING INDUSTRY:
OCCUPATIONAL PROFILE AND EDUCATIONAL ATTAINMENT COUNTY RESIDENTS, 2017

Source: Census Bureau, American Community Survey 1-Year PUMS; Analysis by UCR Forecast Center
Integrated Industry Analysis: Healthcare

HEALTHCARE AND TOTAL EMPLOYMENT GROWTH, SAN BERNARDINO COUNTY
2010 TO 2017

Source: Quarterly Census of Employment and Wages; Analysis by UCR Forecast Center
Integrated Industry Analysis: Automation

**Automation Probability by Industry Cluster**

- Healthcare (40%)
- Logistics - Transportation (73%)
- Logistics - Warehousing (71%)
- Manufacturing (69%)

Source: NESTA; Analysis by UCR Forecast Center. Note: Bubble size corresponds to employment size in 2017.
Workforce Development is the coordination of public and private-sector policies and programs that provides individuals with opportunities for a sustainable livelihood and helps firms achieve exemplary goals, consistent with the regional context.

Individual
Workforce development organizations or bodies thinking about economic growth from the perspective of the individual are focused on improving the economic security of individual members of a community or geographic jurisdiction.

Organization or Firm
The organization-focused approach to workforce development is primarily focused on training workers for the needs of specific employers as they strategize to remain competitive globally.

Region
The regional or community-oriented approach is most closely aligned with a regional economic development approach to workforce development and aims to educate and train individuals to sustain a broader competitive economic environment.
Organizations like REDF advocate for models such as employment-based social enterprise to solve for the unemployment rate of vulnerable communities. REDF’s impact study indicated wrap around support services were linked to increased self-sufficiency and life stability and moreover found to be an overall fiscal benefit to taxpayers.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Benefit to society as a whole</th>
<th>Benefit to SE worker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>$1,257</td>
<td>−$235</td>
</tr>
<tr>
<td>Work</td>
<td>1,257</td>
<td>1,257</td>
</tr>
<tr>
<td>Government transfers</td>
<td>0</td>
<td>−1,647</td>
</tr>
<tr>
<td>Transfers from others</td>
<td>0</td>
<td>155</td>
</tr>
<tr>
<td>Stable housing</td>
<td>75</td>
<td>−1,332</td>
</tr>
<tr>
<td>Criminal activity</td>
<td>503</td>
<td>0</td>
</tr>
<tr>
<td>Health</td>
<td>1,125</td>
<td>1,125</td>
</tr>
<tr>
<td>SE revenues</td>
<td>5,786</td>
<td>0</td>
</tr>
</tbody>
</table>

Impact study
Insight and Feedback

Process-oriented

Skills-oriented
Process-oriented Feedback
Via stakeholder interview and focus group.

Classroom Assets
- Responsive curricular development
- Industry-expert educators
- Rational credentialing

Funding as Incentive
- Dynamic funding streams
- Productive reporting

Shared Vision
- Coordinated goals
- Community-directed communications
- Consideration of audience
Collective Impact

...the shift in responsibility for improvement in outcomes from individual organizations to entire systems

Collective impact model includes:
- Shared measurement of indicators
- Clearly articulated shared goals
- Definition of collaboration
- Backbone organization

The model’s challenges include:
- Backbone organization selection
- Competency in well-coordinated system
- Feasible use of data in support of work

<table>
<thead>
<tr>
<th>Organization Type</th>
<th>Potential Benefits</th>
<th>Potential Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community-based organization</td>
<td>Roots in the community</td>
<td>Low capacity (perceived lack of time, staff, and/or resources)</td>
</tr>
<tr>
<td>City government</td>
<td>History of convening diverse stakeholders</td>
<td>Too political</td>
</tr>
<tr>
<td>Public school system</td>
<td>History of convening diverse stakeholders</td>
<td>Too political</td>
</tr>
<tr>
<td>Postsecondary institution</td>
<td>Demonstrated leadership in partnering with the community</td>
<td>Competition between local colleges</td>
</tr>
<tr>
<td>Workforce organization</td>
<td>Connections to the labor market</td>
<td>Lack of knowledge about education sectors</td>
</tr>
<tr>
<td>Multiple organizations</td>
<td>Distribution of responsibilities according to organizational expertise</td>
<td>More difficult to act as a single unit</td>
</tr>
</tbody>
</table>
“There’s another way to compete, by investing in one’s employees and encouraging long-term employment relationships so employees can achieve high productivity and therefore can support good jobs and good wages. High-road businesses can be profitable and serve shareholders in the long run, too.”

HIGH ROAD
Employment Practices

- Establishment effect on wages but industry segment important.
- Provide a path to adequate wage in a low-wage industry

HPWO
Employment Practices

- Target increased productivity & quality of work via better org. performance
- Job-crafting: employee discretion on effort and creativity
Models for High Road and HPWO:

NYCEDC supported program to empower small businesses to improve job quality.

Example Hitachi Foundation Pioneer Employer, Marlin Steel Wire Products, pays employers to upskill.

Leverages purchasing power of anchor institution for a single coordinate strategy for community economic development.

Creates living-wage jobs in six low-income neighborhoods in Ohio.
“While there are no easy solutions and there have been mixed empirical results with stackable credentials, there are risks – some of which pertain to the behavioral economic decision-making of students themselves – in framing vocational training as something substantively different from a credit-bearing education.”

**Community Colleges: Training grounds for U.S. workforce**

- Understand goals of different student population segments and set goals accordingly
- Avoid demographic pigeonholing and tracking students – particularly low-income or minority students – into a narrow vocational path.
Process optimization

Strategic Rollout: *a la Mental Health Act*

**Unified vision and priorities aligned with funding cycle and industry needs**

<table>
<thead>
<tr>
<th><strong>Individuals</strong></th>
<th>Community communication; perception vs. reality (pigeonholing)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CBOs</strong></td>
<td>Convene: provide and fund frameworks and data-driven opportunities for partnership</td>
</tr>
<tr>
<td><strong>Government</strong></td>
<td>Community colleges judged by outcomes; students need skin in the game too</td>
</tr>
<tr>
<td><strong>Firms</strong></td>
<td>Partner with universities and peers to fund pre-competitive solutions and foundational skillsets</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td>[Pops] Immigrant status</td>
</tr>
</tbody>
</table>

Geographies

Incentives alignment

Networks; Innovation ecosystems

Credentialing

Curricular development [credit/non-credit; timeline; streamlined]

Industry – Edu. Partnership; certifications
Skills-oriented Feedback
Via stakeholder interview and focus group.

Technical
- Computation/math/STEM
- Technical reading and writing
- Mechatronic (cluster)
- Machinist/fabrication

Behavioral
- Conflict mediation, ethics
- Radical candor
- Safety and safety mgmt.
- Inter-cultural personability and communications

Mindset
- Process-orientation and systems-thinking
- Entrepreneurial skillset
- Problem-solving skills
Skills Mismatch in U.S. Manufacturing?

**Alternative scenarios to skills mismatch**
- Vocal and visible employers’ desire for increased publicly funded training
- Lack of competitiveness
- Temporary adjustment; SBTC
- Communication, coordination, disaggregation

**Skills mismatch survey results**
- Technical reading and math skills
- Unique skills need
- Member of industry cluster

“The mechanics of labor market disaggregation, communication, and coordination may ultimately provide a more appropriate framework for thinking about labor market challenges than conventional skill mismatch formulations.”
Behavioral Skills: B2C Skills in a connected market

In an increasingly hollowed out market environment where technology diminishes the need for the middle men and firm of supply chains, opportunities for direct business-to-customer interactions and transactions abound.

“We’re moving away from the archaic supply chain of extraction, manufacturing, distribution center, warehouse, retailer. That paradigm has evolved. Many of the manufacturers are going direct to consumer for improved efficiency.”

Mindset Skills: Entrepreneurial competency development

Entrepreneurial competencies are a useful framework for thinking about the value of entrepreneurship in terms of a skillset and further a teachable one.

*Entrepreneurial competencies include: opportunity recognition; opportunity assessment; risk management and mitigation; conveying a compelling vision; creative problem solving and imaginativeness; value creation; and building and using networks.*
There are programs geared at green capacity building in small businesses (E-Contractor Academy); green career pathway creation (ACES [Architecture, Construction, Engineering Students] Pathway Program; and, an Apprenticeship Guide. through a combination of green jobs training, community greening programs, and social enterprise, SSBx provides skills training in green construction and offers USBC, EPA Lead and OSHA 10 certifications among others. The City launched the “We Build Green Cities” Campaign which was a City-wide effort to market and export Portland firms that sell ideas, services, and products around sustainability.

<table>
<thead>
<tr>
<th>Cluster-Based Perspective</th>
<th>GVC Perspective</th>
<th>Workforce implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade</td>
<td>Trade in tasks/activities and intermediate goods</td>
<td>Process-based knowledge and skills rival product-based knowledge</td>
</tr>
<tr>
<td>Networks</td>
<td>Production networks controlled by lead firms</td>
<td>Increased importance of managerial learning from global sources</td>
</tr>
<tr>
<td>Participation</td>
<td>GVC participation requires deliberate choice</td>
<td>Knowledge of position in and trajectory of upgrading provides insight into skill requirements</td>
</tr>
<tr>
<td>Norms and regulation</td>
<td>Compliance with international standards</td>
<td>Rising importance of training to comply with new product and process standards and internationally recognized certifications</td>
</tr>
</tbody>
</table>
Clarify the workforce development paradigm(s) for the County’s portfolio(s) of interventions: As discussed, workforce development can be thought about from a variety of vantage points that imply different sets of goals and activities. While the County may engage all three paradigms through different programmatic investments, it can be useful to organize programmatic portfolios around particular paradigms so that broad goals, constraints, and essential ecosystem partners are considered.

Engage managerial policy and managers of local employers on High Road employment practices and collaboratively further explore High-Performance Work Organization practices: The County can engage leaders in the local business community to improve the quality of the County’s existing jobs, leveraging models like Best for NYC and anchor institution models.

Consider establishing a backbone organization or coalition of organizations for the coordination of workforce development efforts across the County: Backbone organizations are tasked with solving challenges around coordination and communication. They are also responsible for articulating shared goals and keeping partner organizations accountable to clearly defined metrics for success.

Facilitate a collaborative effort among community colleges to identify their distinct student populations and their respective goals, connecting those populations among institutions. Juggling institutional goals, partnerships, and strategy development for all three student populations discussed in the report is burdensome for any one community college; government bodies can help facilitate the sharing of that burden particularly as it applies to employer-driven curriculum development and training opportunities. This also decreases redundant outreach with the private sector.

Recommendations: Process-oriented
Identify potential ways of codifying regionally-relevant vocational training in the traditional credit-bearing education system. San Bernardino County employers voiced frustration around translating their needs into credit-bearing courses in the formal education system. When vocational training lives outside of the education-to-career system, there is increased risk for demographic pigeonholing and self-selection bias.

Explore need for customer-facing skills including skills around value proposition. Based on San Bernardino County stakeholders’ feedback, employers in the region noted the ability to proposition value as a higher priority soft skill given the increased interaction firms are having with customers directly, as a result of technology.

Focus on challenges around (1) communicating those high-productivity sills employers are willing to pay more for and community colleges are willing to pivot training toward; and (2) coordinating investments for which payoff is acceptable to employers and costs are acceptable to training institutions but for which there is no initiating investor. In disaggregated industry clusters, communication and coordination between employers and workforce training institutions is difficult and act as barriers to mutually beneficial investments in upskilling.

Identify which specific entrepreneurial competencies are most useful to San Bernardino County’s core industries and their respective firms. Entrepreneurial competencies help articulate the value of entrepreneurship and entrepreneurial experiences into skills and standards which can be integrated into training. There may be industry-specific trends around entrepreneurial competencies and their respective value to the processes and dynamics of particular industries in San Bernardino County.
Use sustainability and green regulatory frameworks to explore cross-sectoral upskilling initiatives. San Bernardino County given its assets, core sectors, and regulatory infrastructure is well-positioned to explore a competitive advantage in green regulatory infrastructure across its core sectors.

Recommendations

Leverage GVC (global value chain) approaches in development to identify global market opportunities for competitiveness. The County may consider green regulatory initiatives or any other initiatives in a GVC context which introduces a different set of priorities than those of a local industry-cluster approach to workforce development. GVC approaches focus on global market entry and success and factors influencing that trajectory like lead firms which often act as gatekeepers or facilitators for international trade.
Constituency
Whom do you seek to serve? It is important for the intervening body to clearly articulate whom it seeks to serve through the design of a specific intervention. Solving challenges for one constituency may not solve it adequately for another and it often costs more to solve the same challenges for different constituencies.

Levers
Consideration of an agency’s deployable levers maximizes the return on a potential investment. By identifying core levers, the intervening body may eliminate consideration of challenges or opportunities it is not well-positioned to address.

Additionality
Articulated consensus on an intervening actor’s unique value can help maximize the efficiency of the intervention design process. The intervener’s additionality can be likened to what outcomes or results would not be generated if not be for the intervener.
**Intervention Framework: Toolbox**

**Logic Model**
Logic models help design the how of an intervention and connect resources and inputs with activities, outputs, outcomes, and finally impact.

**Theory of Change**
The theory of change is the outcomes pathway or the interlinking series of relationships that encapsulates a theory of how and why certain outcomes are expected to result from the intervention.

**Metrics for Success**
Economic data indicators can be useful tools for both defining success in empirical terms and evaluating whether or not success has been achieved post intervention.

**Government’s Justification**
In addition to identifying what intervention is believed to be most effective, government actors must grapple with the question of market interference. The framework of market failure can be a useful one for government actors when considering intervention.
Thank you for your time and attention.