



The Economic Impact of the
Child Care Industry

in South Dakota



the university of south dakota.



The Economic Impact of the **CHILD CARE INDUSTRY IN SOUTH DAKOTA**

A study funded by The Annie E. Casey Foundation
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SECTION I

Introduction

Like agriculture, tourism and health care, South Dakota's child care industry is vital to the state's economy. Child care providers purchase services from other industries and many have significant investments in buildings. Child care workers earn wages and pay taxes.

Perhaps most significantly, the child care industry makes it possible for parents to work in agriculture, tourism, health care — and every other sector of the economy. It also prepares children for future success in schools and the workforce.

Common sense tells us the effects of the child care industry in South Dakota are widespread. But common sense doesn't assess and quantify measurable public revenues of the industry.

With funding from the Annie E. Casey Foundation, the South Dakota KIDS COUNT project aims to do that here. This document includes statistical data that quantifies the direct and indirect economic impact of the child care industry in South Dakota.

It is the hope of all those associated with the project that this report will be a first step in integrating child-care planning into local, regional and state economic development plans. Thoughtful collaboration among child care specialists, economic developers, businesses, planners and public officials can strengthen South Dakota's economy and ensure the well-being of children.

SECTION 2

Why Early Education Matters¹

In terms of brain development, the first three years of life are critical. Recent research shows that 85 percent of brain development takes place between birth and 3. That has profound implications for parents and child-care providers.

How the brain develops

Brain development is greatly influenced by what the child experiences. Environment affects how

large and how fast a child's brain grows, and it helps direct the actual "wiring" of the brain's circuitry.

The brain develops from the least complex part — the brainstem, which controls basic involuntary life functions like heart rate and body temperature — to the most complex, the cortex, which controls reasoning and abstract thought. The brain is made up of neurons and neuron pathways. Neurons are long, wiry cells that carry electrical messages through the nervous system. They are responsible for most brain functions, such as seeing, hearing, speaking, learning and experiencing emotions. Neurons connect with each other across tiny spaces called synapses, which are formed when stimulated by experiences. The connected neurons are then joined to form the permanent pathways through which we learn and process information throughout our lives (see page 8).

Timing matters

Specific parts of the brain must be stimulated within a specific time to develop normally. If crucial environmental cues are not present during these periods, the parts of the brain that regulate those functions may not develop appropriately.

The brain systems that control vision and language begin forming early. The window of opportunity for vision is birth to about 6 months. Children who are deprived of visual stimulation during this time will not develop the necessary neural connections, and may become visually impaired. For speech

and vocabulary development, the critical window is birth to 3 years. The sounds a child hears in those years largely determine the size of her/his adult vocabulary.

Growing emotionally

A great deal of emotional development takes place during the first 18 months. There is no substitute for a nurturing environment from a loving, consistent caregiver. Without it, a child is unlikely to be emotionally stable.

Without nurturing human interaction, the cortex and limbic system—the top layers of the brain that control higher levels of thought and help regulate impulsive emotional response — do not grow and organize normally. Research clearly shows that excess stress early in life can be damaging. Chaotic, traumatic, unpredictable experiences cause the release of a brain chemical called cortisol. When this hormone washes over the brain in high amounts, it can cause certain regions of the brain that regulate emotional response and attachment to be 20 to 30 percent smaller than normal. The continued release of this hormone can cause a child to become "stuck" in a "high alert" or "fight or flight" state even when there is no danger. This stress response state can lead to aggression, emotional and behavioral problems and undermine the ability of children to develop critical cognitive and social skills.

Given the importance of brain development in children, the child care industry has an extraordinary

How the brain develops

The brain has about 100 billion neurons at birth. During the first eight months of life, neurons link up at an amazing pace. By the end of that period, a baby can have as many as 1,000 trillion synapses. These synapses, however, operate on a "use it or lose it" principle. To become permanent, the connections must be reinforced through everyday experience and stimulation.

Throughout childhood and up to about age 11, the brain goes through a process of organizing itself by shedding electrical connections that have not been repeated often enough to form permanent pathways. Around age 11, early connections end up in the discard pile and a child retains half as many (500 trillion) synapses — roughly the same as an adult. A child's brain is 70 percent developed by age 1. Once a child reaches age 3, 85 to 90 percent of the core brain structure has been formed.

¹ Sources used for this information: National Research Council and Institute of Medicine (2000) *From Neurons to Neighborhoods: The Science of Early Childhood Development*. Committee on Integrating the Science of Early Childhood Development. Jack P. Shonkoff and Deborah A. Phillips, eds. Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, D.C.: National Academy Press.

Arkansas Advocates for Children and Families (2000). *Brain Development & Early Childhood*. An Arkansas KIDS COUNT Special Report. Little Rock, AK.: Author

² *Early Learning Left Out: An Examination of Public Investments in Education and Development by Child Age*. A report by: Voices for America's Children and the Child and Family Policy Center in partnership with: Voices for Alabama's Children, Children's Action Alliance of Arizona, Colorado Children's Campaign, Connecticut Voices for Children, Kansas Action for Children, Michigan's Children, Citizens for Missouri's Children, South Dakota Coalition for Children, Vermont Children's Forum, The Children's Alliance of Washington, Wisconsin Council on Children and Families

³ *IBID*. p.4.

undertaking. Quality care can put children on a positive path for life that benefits them and society.

Early Learning Left Out

Public investment fails to reflect what we now know about brain development. More than 85 percent of a child's core brain structure is formed by age 5. But in South Dakota, only 4 percent of local, state and federal investments in education and development have occurred by that time. The fiscal analysis report, *Early Learning Left Out: An Examination of Public Investments in Education and Development by Child Age*,² found that the vast majority of public investments in education and development occur after the first years of life.³ (See Chart A and Table 1 on next page.)

SECTION 3

Trends Affecting Child Care in South Dakota

South Dakota children and their families are on the move. The 2000 U.S. Census makes that abundantly clear. People are leaving rural counties for larger cities. The child population varies widely from county to county. And while the need for quality child care is critical everywhere, in some parts of the state there simply aren't enough children to support a center.

Child Population

Analyses of Census 2000 data for the state of South Dakota show the following demographics for child populations under age 6 (Map 1) and ages 6-13 (Map 3).

- The state's under age 6 child population fell by 7.3 percent

between 1990 and 2000, and the state's age 6-13 population fell by 1 percent. Meanwhile the total population of all residents grew by 8.5 percent.

- The number of children per county under age 6 ranges from a low of 73 in Harding County to a high of 12,826 in Minnehaha County (Map 1).
- Almost half of South Dakota's child population under age 6 is concentrated in six counties: Minnehaha, Pennington, Brown, Lincoln, Codington, and Meade (29,780 of 61,352 total children under age 6 (Map 1).
- Between 1990 and 2000 the under age 6 population decreased by 4,851 in the state as a whole, or about a decrease of 7.9 percent (Map 2). Not all counties decreased in population. Eleven counties saw increases of 1 to 938 children.

Chart A

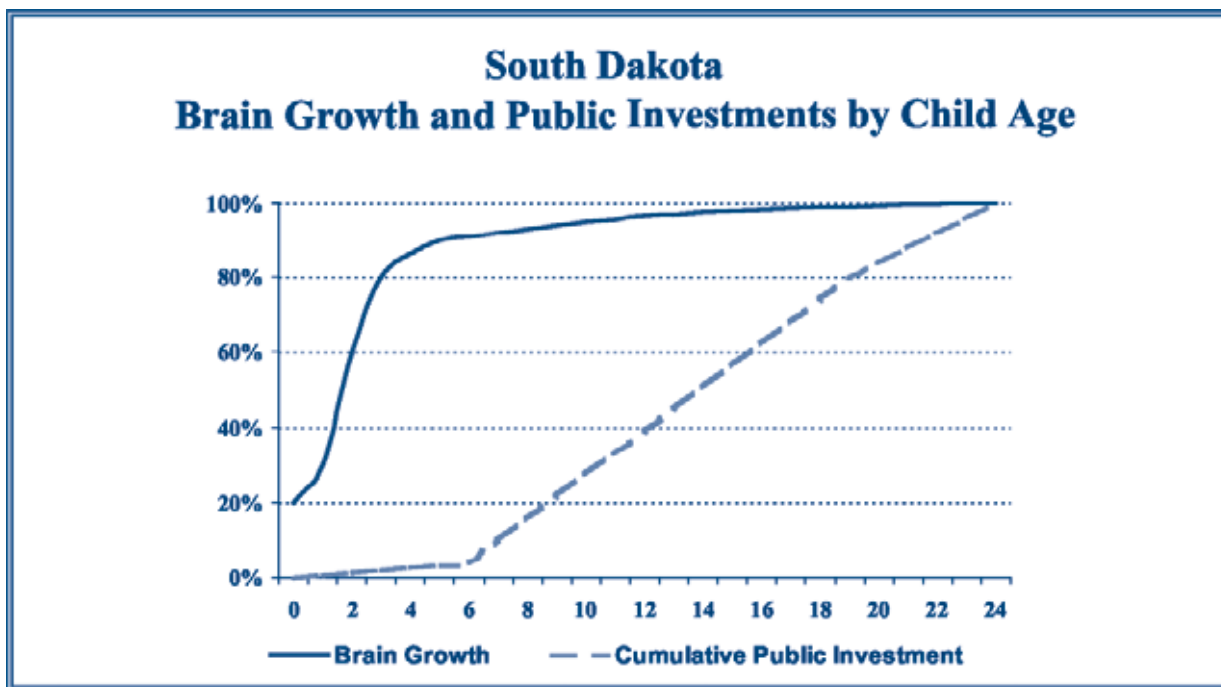


Table 1

Total and Per Capita Annual Public Spending by Child Age							
Child Age	Amount in Millions			number of children	Amount in dollars		
	State and Local	Federal	Total		Per Capita State and Local	Per Capita Federal	Per Capita Total
Early Learning (age 0-5)	\$1.82	\$33.24	\$35.06	61,352	\$30	\$542	\$571
School Age (age 6-18)	\$592.44	\$73.40	\$665.84	163,856	\$3,851	\$477	\$4,328
College Age (age 19-23)	\$115.83	\$62.40	\$178.23	55,823	\$2,075	\$1,118	\$3,193

Note: South Dakota data includes federal, state, and local funding sources where appropriate and available. The following categories of expenditures were excluded: capital outlay and bond redemption expenditures, Native American tribal expenditures, and federal funds distributed directly to tribes or tribal organizations.

- About 45 percent of South Dakota's child population age 6 to 13 is concentrated in the same six counties as the under age 6 group: Minnehaha, Pennington, Brown, Lincoln, Codington, Meade — 40,744 of 91,261 total children ages 6 to 13 (Map 3).
- The county with the smallest number of children age 6-13 is Jones County (Map 3) with 135, while Minnehaha County has the greatest number, 17,279 (Map 3).
- Between 1990 and 2000 the age 6 to 13 population decreased by 894 in the state as a whole, or about a decrease of 1 percent (Map 4). Not all counties decreased in population. Twenty-three counties saw increases of 1 to 2,122 children.
- The state's child population has become increasingly diverse. Particularly noteworthy is the rapid growth of the American Indian child population, which grew by 13.4 percent for the age group 0 to 13 years.

Parents in the Workforce

For most parents, work is a necessity, not a choice. The increasing number of

families with both parents working, the rise in single-parent families, and the higher cost of living have caused major changes. Instead of a child-rearing model in which daytime care of young children is left to parents, early care and education is now also provided by caregivers outside the home.

South Dakota leads the nation in the percentage of women in the workforce with children under 6 and 6-17. (See Table 2, page 5)

At 47 percent, South Dakota also has the highest percentage of children under age 6 in paid child care, so parents can work.⁴ That percentage is twice the national average of 26 percent. In South Dakota, 73 percent of children under age 6 live with families where all parents are in the workforce (Map 5).

The Child Care Industry

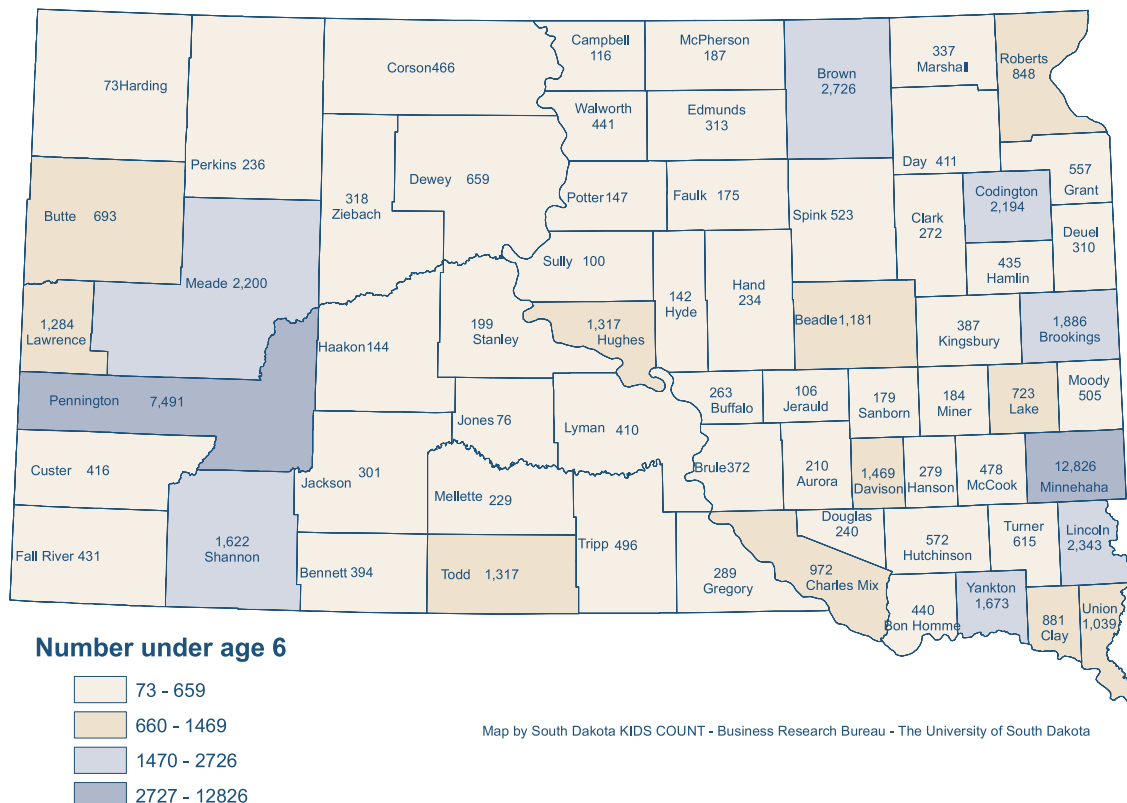
The child care industry plays a critical role in the state's economy — and in the lives of many South Dakotans. According to the South Dakota Department of Labor, there will be 234 workers needed yearly in the child care industry. The U.S. Department of

Labor, Bureau of Labor Statistics, Occupational Employment Statistics for 2002 showed South Dakota had the second highest concentration of child care workers. South Dakota's 2,430 child care workers represented 0.67 percent of state employment. (See Table 3, page 5.)

Much child care is provided by child care professionals and para-professionals. It includes a range of services that educate and nurture young children and enable parents to work or attend school. Child care programs in South Dakota fall into the following categories:

- **Licensed programs** include Group Family Child Care, which offers care for 13 to 20 children, and Child Care Centers (including school-age programs), which care for 20 or more children. These programs operate both as non-profit and profit organizations.
- **Registered programs** are Family Child Care Homes, caring for up to 12 children from more than one unrelated family in a family home. While registration is voluntary, it is

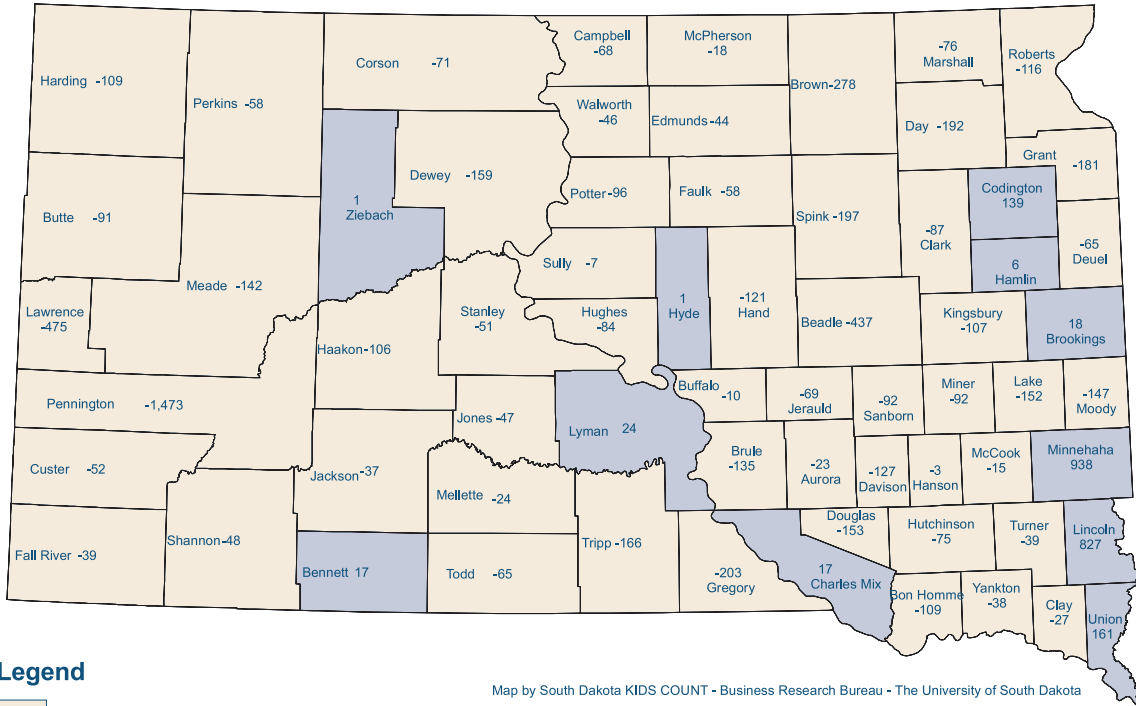
Number of children in 2000 under age 6
South Dakota = 61,352



Map by South Dakota KIDS COUNT - Business Research Bureau - The University of South Dakota

Source: P14. SEX BY AGE FOR THE POPULATION UNDER 20 YEARS [43] - Universe: Population under 20 years. Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data.

Change in the under age 6 age group from 1990 to 2000
 (South Dakota overall decreased by 4,851 children or a negative 7.9 percent change)



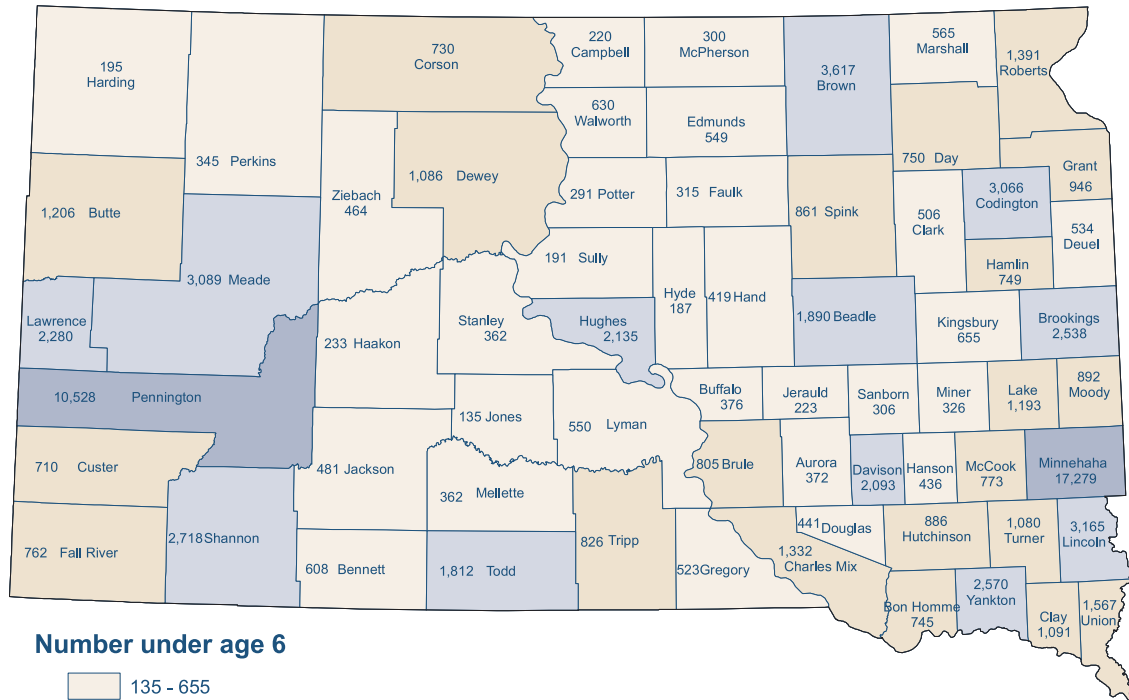
Legend

- Decline (0 to 1,473 children)
- Increase (1 to 938 children)

Source: P011. AGE - Universe: Persons. Data Set: 1990 Summary Tape File 1 (STF 1) - 100-Percent data. U.S. Bureau of the Census 1990 Census of Population and Housing

And
 Source: P14. SEX BY AGE FOR THE POPULATION UNDER 20 YEARS [43] - Universe: Population under 20 years. Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data.

Number of children in 2000 ages 6 to 13
 South Dakota = 91,261

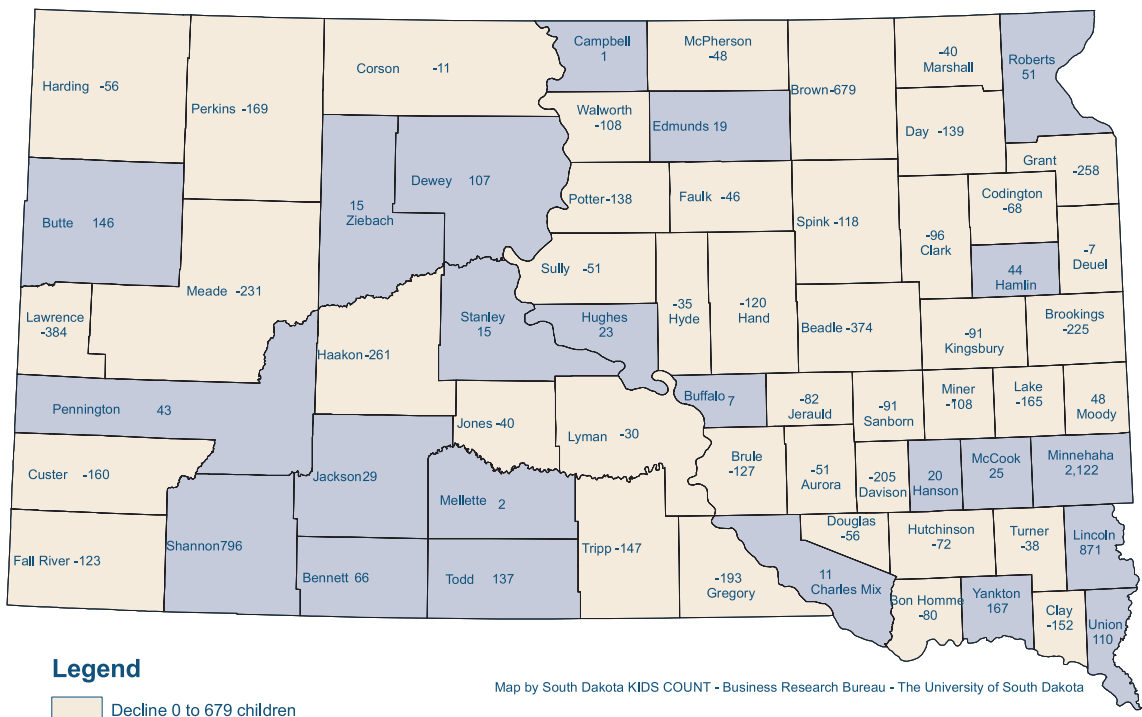


Number under age 6

- 135 - 655
- 656 - 1,567
- 1,568 - 3,617
- 3,618 - 17,279

Source: P14. SEX BY AGE FOR THE POPULATION UNDER 20 YEARS [43] - Universe: Population under 20 years. Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data.

**Change in the age 6 to 13 age group from 1990 to 2000
(South Dakota overall decreased by 894 children or a negative 1 percent change)**



Legend

- Decline 0 to 679 children
- Increase 1 to 2,122 children

Source: P011. AGE - Universe: Persons. Data Set: 1990 Summary Tape File 1 (STF 1) - 100-Percent data. U.S. Bureau of the Census 1990 Census of Population and Housing

Source: P14. SEX BY AGE FOR THE POPULATION UNDER 20 YEARS [43] - Universe: Population under 20 years. Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data.

required for caregivers who receive public funding.

- **Unregistered programs** are Family Child Care Homes operating and caring for up to 12 children from more than one unrelated family. Exempt from regulatory standards,

they are not part of a formal system and are not represented in this study.

- **Head Start, Early Head Start** Both are comprehensive child development programs that serve children from birth to age 5. They are child-focused programs with an

overall goal of increasing social competence and school readiness for low-income families.

All these programs are distinct parts of a system of care on which parents rely during working and/or school hours. See Appendix A for a more detailed explanation of the various types of formal care that make up the child care industry in South Dakota.

The child care industry benefits South Dakota as follows:

1. It enables businesses to hire workers, decrease absenteeism and turnover and increase productivity. With quality, dependable child care, parents in the workforce are more productive and more likely to continue in their current positions. Reducing turnover saves businesses money, which bolsters the state's economy as well.
2. It ensures a strong future economy by preparing children for academic success (See Section 2). The foundation for learning, including social and emotional well-being, develops very early.⁵

Table 2

Women in the Workforce with Minor Children			
	South Dakota	United States	
Total	81.7%	69.0%	
With children under 6 only	77.5%	63.5%	
With children under 6 and 6-17	75.4%	60.0%	
With children 6-17 only	85.8%	75.0%	

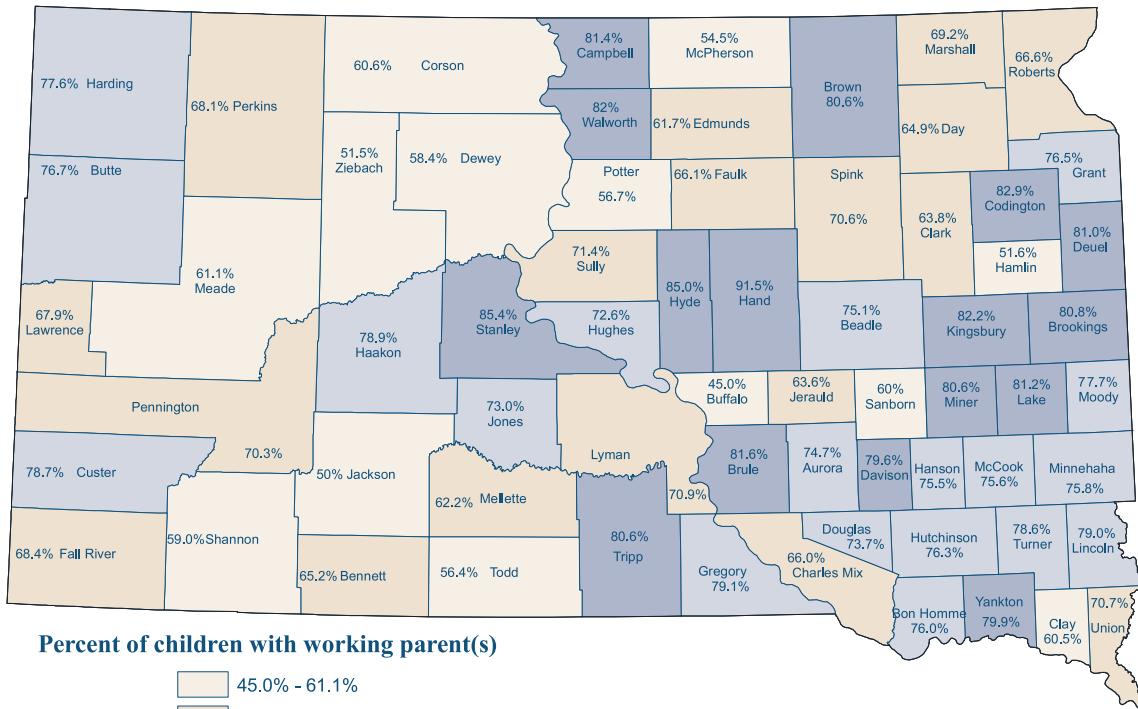
Source: U.S. Census Bureau. Census 2000.

Table 3

States with the Highest Concentration of Child Care Workers		
State	Employment	Percent of State Employment
Vermont	2,280	0.78%
South Dakota	2,430	0.67%
Arkansas	7,300	0.65%
New York	50,450	0.61%
New Jersey	22,930	0.60%

Source: U.S. Department of Labor website www.bls.gov/oes/2002/oes399011.htm and accessed October 5, 2004.

**Percent of children under age of 6 living with both parents or one parent who are in the workforce
South Dakota = 73%**

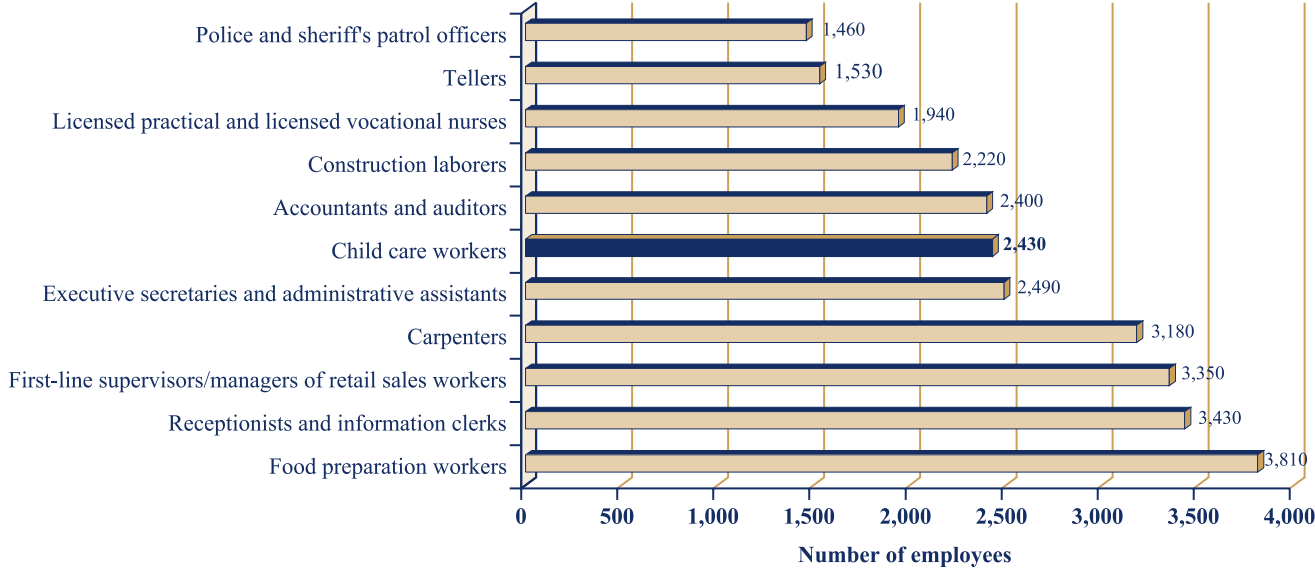


Map by South Dakota KIDS COUNT - The University of South Dakota

P46. AGE OF OWN CHILDREN UNDER 18 YEARS IN FAMILIES AND SUBFAMILIES BY LIVING ARRANGEMENTS BY EMPLOYMENT STATUS OF PARENTS [27] - Universe: Own children under 18 years in families and subfamilies

Chart B

2002 Occupational Employment for Selected Jobs in South Dakota



Source 2002 State Occupational Employment and Wage Estimates, Bureau of Labor Statistics, Department of Labor website www.bls.gov/oes/2002/oes_sd.htm accessed October 5, 2004.

3. Child care itself is a significant industry. The child care industry in South Dakota employed 2,430 workers according to Bureau of Labor Statistics (BLS). Child care workers comprise almost one-fourth of all Personal Care and Service Occupations (2,430 of

9,990 total employed in that occupation field). Chart B shows how child care workers compare with employees of other occupations in South Dakota.

Financial struggles

But child-care providers often find it difficult to make a living. It takes an

enrollment of 10 full-time preschool-age children to make up the cost of caring for five infants or toddlers at current South Dakota rates.⁶ Although a lower child-to-adult ratio generally results in higher quality care, at current reimbursement rates, it could take four full-time children to offset the cost of one staff person —

⁵ Early Learning Left Out: An Examination of Public Investments in Education and Development by Child Age. February 2004.

⁶ South Dakota Market Rate Survey, South Dakota Department of Labor, Labor Market Information Center, South Dakota Department of Social Services, Office of Child Care Services, June 2003.

and that doesn't factor in facility, supply, food and administrative costs.⁷

Child care programs spend nearly 70 percent of their operating budgets on salaries and are hard-pressed to offer benefits. With staff turnover averaging 44 percent, the cost to hire and retrain staff can be financially devastating. The majority of child-care programs in South Dakota do not operate solely on parent fees because parents, who typically have not reached their peak earning power, cannot afford the full cost of quality child care. Ongoing federal, state and local support enables child care operators to offer services beyond the very basic health, safety and educational needs of children.

Occupational and wage estimates show that annual earnings for workers in the child-care industry averaged \$15,120 in 2002, less than construction laborers (\$21,840), executive secretaries/administrative assistants (\$27,210) and well below the average of \$27,680 for all occupations.

SECTION 4

The Economic Impact of the Child Care Industry

The purpose of this research is to determine the economic impact of the child care industry in South Dakota. What might appear to be a relatively straightforward endeavor — determining the number of children being served and the fees paid for that service — is elusive. The child care industry is difficult to quantify because it encompasses large licensed centers serving communities to small unregistered family day cares. In addition, many licensed centers are subsidized by employers, churches and nonprofits. And to further obscure the picture, it is impossible to tabulate unregulated providers, hence they are not included.

Chart D shows the direct effects, the indirect effects, and induced effects of South Dakota's child care industry. The multiplier analysis that follows introduces two types of multipliers. There are expenditures whose impacts are best described by Type I multipliers and there are expenditures whose

impacts are best described by Type II multipliers. Type I multipliers include "Direct" and "Indirect" spending, while Type II multipliers include "Direct," "Indirect" and "Induced" spending. The two types of multipliers are distinguished by how far a dollar's worth of business activity is followed through the economy.

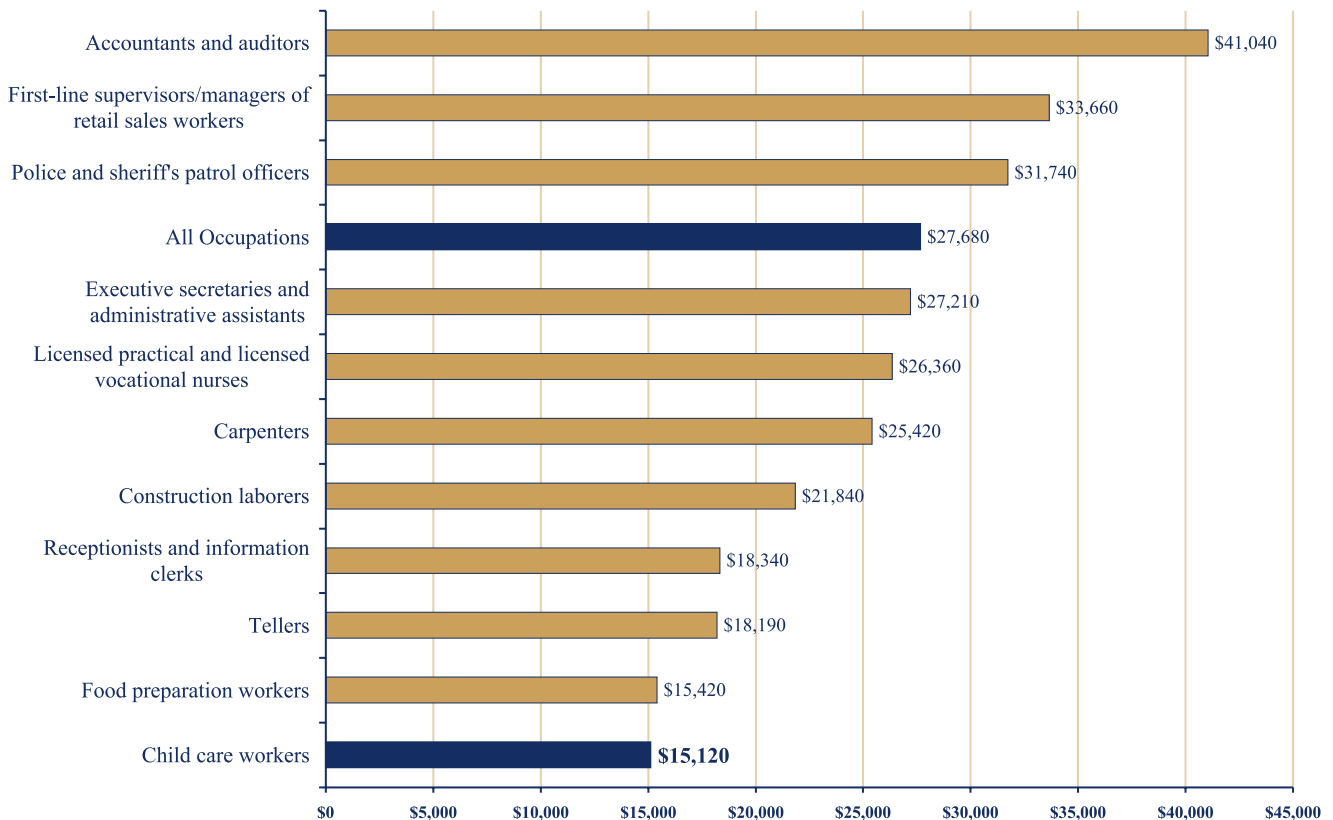
Multipliers

Type I multipliers address the purchase of daycare services from a provider and the purchase of materials and services from other businesses by the child-care providers in the course of accomplishing their work. That is where the tracking of the money stops when a Type I multiplier is used.

Type II multipliers go one step further to track the money as it circulates through the economy. The Type II multiplier includes the direct and indirect business activity described in the Type I definition but adds household expenditures. The Type II multiplier tracks the money paid to the workers by the child care provider and the businesses from which they purchase services and

Chart C

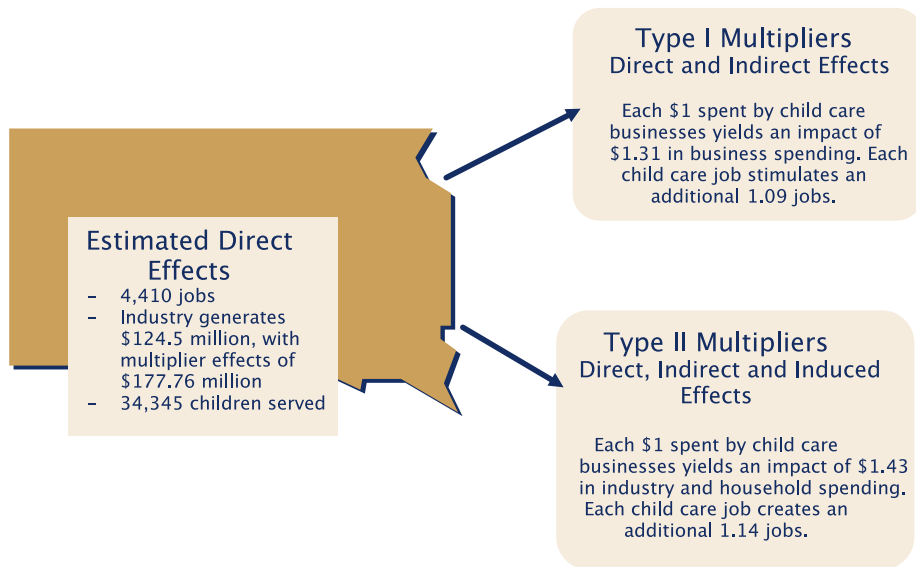
2002 Average annual wage for selected jobs in South Dakota



Source 2002 State Occupational Employment and Wage Estimates, Bureau of Labor Statistics, Department of Labor website www.bls.gov/oes/2002/oes_sd.htm accessed October 5, 2004.

7 Child Care Market Rate Survey, South Dakota Department of Labor, Labor Market Information Center, South Dakota Department of Social Services, Office of Child Care Services. June 2003.

Chart D: Direct and Multiplier Effects



products. The induced spending is money spent by the workers' households as a result of their earnings in the child care and supporting industry.

The assumption is that money originating in South Dakota or "existing" money would have been spent in the state's economy one way or another. The choice was made to spend the money on child care that would have been spent on other goods and services. This means that household spending, the induced spending, would have taken place one way or another and the industry should not receive credit for those expenditures.

Federal money and foundation money is "new" to the South Dakota economy. It would not have been spent by households in South Dakota had it not been brought to the state by this program. The impact of this new money is measured as direct expenditures, indirect expenditures and induced expenditures, with the induced expenditures being the distinguishing characteristic for Type II multipliers.

Within these definitions, the impact of out-of-pocket money spent on child care by South Dakotans is estimated (as are state tax dollars) using a Type I multiplier. Federal money and foundation money is new to the state and its impact is estimated using the Type II multiplier. Because the Type II multiplier includes household spending that Type I expenditures do not, the Type II impacts are larger.

Type I multipliers for the South Dakota child care industry show that every dollar (\$1) spent on child care results in \$1.31 dollars of business activity. This measure accounts for the dollar (\$1) spent from South Dakota sources and thirty-one cents (31 cents) spent by the child care industry at other South Dakota businesses.

Federal fund and foundation expenditures qualify for impact estimation using the Type II multiplier. The dollar (\$1) spent on child care will result in the purchases of 31 cents from other businesses, plus 12 cents induced expenditures, at the household level for a total impact of \$1.43 as measured by the Type II multiplier. There is an additional 43 cents of business activity that results from each new dollar to the South Dakota economy spent on child care.

The difference in job creation resulting from Type I and Type II multipliers are substantial. For every job created in the child care industry using existing South Dakota money (Type I impact) there is sufficient business activity created to justify 1.09 workers. That means it takes approximately eleven (11.1) people working in the child care industry paid with South Dakota money to create an additional job. It takes less than half (1.14) that, using money new to the state with a Type II impact. It takes a little more than seven jobs (7.14) funded from out-of-state resources to create one additional job within the state.

How these numbers were determined

Economists use a number of methods to analyze the impact of a business sector on an economy at the local, state, or national level. The economic estimates for this report are based on the IMPLAN Input-Output Model (I-O Model). See Appendix B for an explanation of this model.

Data for the IMPLAN Model came from the Office of Child Care Services, South Dakota Department of Social Services and from the Head Start federal office in Denver, Colorado. The Office of Child Care Services reports the number of establishments that are licensed or registered and how the money flows to them. There is no requirement that all family child care homes be registered. Qualification for government assistance may be the only incentive for being licensed with the state. Limiting an analysis to those providers that are licensed and registered is consistent with the analysis from other states.

See Appendix C for the specific calculations.

Comparisons to other industries

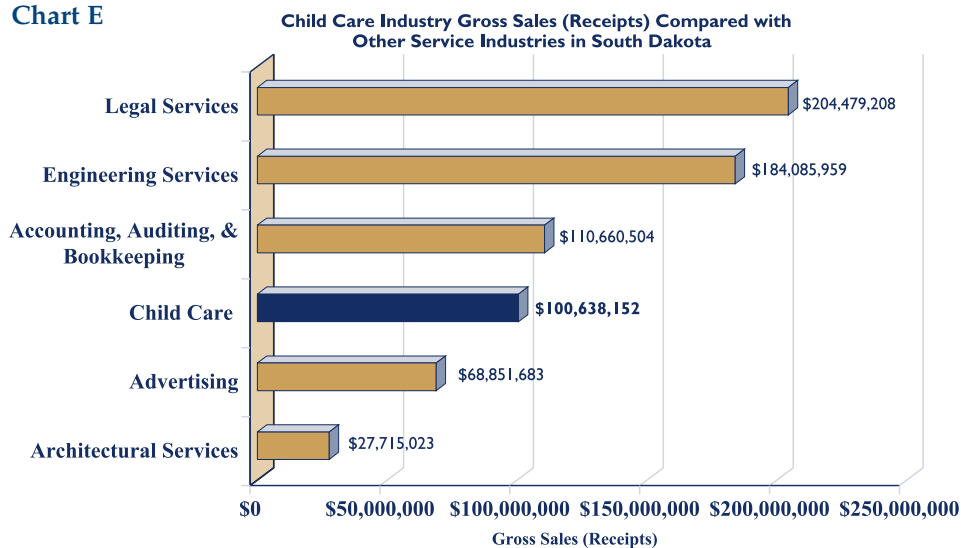
Comparing the child care industry gross receipts with other service industries in the state puts the size of that industry into context. The child care industry is larger than the service industries of advertising and architectural services combined and about half the size of engineering services (See Chart E.)

Leveraging Federal Funds

Leveraging of money is an additional concept that relates to the economic impact of governmental expenditure choices. It is a measure of financial impact that is separate and distinct from the multiplier estimate of economic activity as a dollar makes its way through an economy. This is a measure of money that brings external funds to the economy on a match basis or as a result of satisfying a requirement.

The method that follows shows a method similar to that developed by Kansas to describe the leveraging of state and other discretionary money. State funds are those monies originating from a state's tax system. These funds are commonly from the state's general fund but can be dedicated money in addition — for example, Kansas uses its tobacco settlement money for child care.

Chart E



At the state’s discretion, South Dakota spends TANF money and Bush Foundation grant money on child care in addition to the state’s general fund expenditures. The fact that this money could be spent on goods and services other than child care qualifies it for consideration as local effort in the Kansas methodology and is quoted in other child care literature.

Leveraging is the acquisition of federal funds using state funds for match. Note below in item three that Head Start funds are not included in the measure of federal funds. This money is not included because the amount that a state receives is not dependent upon the state matching the money. Head Start money is awarded independent of any state effort.

1. South Dakota funding in calendar year 2003 includes the following categories:

- a. State General Funds **\$2,317,020**
 - b. TANF (Federal funds that could have been spent elsewhere.) **\$1,748,738**
- \$4,065,758**

2. Federal funding includes monies that could only be used for early care and education services in South Dakota. This item includes Child Care Discretionary money, Child Care Development Mandatory funds and Child Care Development Fund Matching funds. It does not include Head Start funding.

- a. Federal Funds **\$11,476,289**

3. The Leverage of Federal Funds to South Dakota Investment is the ratio:

$$\frac{\$11,476,289}{\$4,065,758} = 2.82$$

4. By measure using the above definition, every dollar that South Dakota chooses to invest in child care leverages \$2.82 in federal funds. That is not to suggest additional state expenditures will increase the federal match. The state is currently leveraging child care money to the maximum possible.

SECTION 5

Conclusion

Child care is fundamental to a strong South Dakota economy. Without it, the labor supply would diminish, putting many businesses at risk.

Parents whose youngsters are in high-quality child care can concentrate on the job, knowing that their daughters and sons are safe in an environment that supports crucial early brain development.

Children — and society — benefit from high quality child care. Eighty-five percent of a child’s core brain structure is formed by age 3. What happens in the first few years of life can determine the likelihood of a child staying in school. It can also affect future earning power. And that’s just part of the picture. Studies show that youngsters who miss out on the basic pre-reading and language skills that develop from birth to age 5 may require special education or remedial classes later. They are more likely to drop out of school, receive welfare benefits and commit crime. The cost to society is great.

Child care also is an economic force that creates jobs and generates local income:

- Licensed and registered child care creates 4,410 jobs in South Dakota. That’s more than telecommunications, clothing stores, health and personal care stores, publishing and utilities.
- Licensed or registered child care in South Dakota generates over \$100.6 million in gross annual receipts.
- By investing in child care, South Dakota leverages more than \$11.4 million in federal funds at a \$2.82 to \$1 ratio.
- Yields \$124.5 million in direct economic activity.
- Produces \$177.6 million in economic activity, with multiplier effects.

High-quality child care is critical to meeting two of South Dakota’s greatest needs: making it possible for parents to work and ensuring that every child enters school ready to learn. It benefits everyone when children get a strong start. They become productive learners, workers and citizens. That’s as fundamental an investment in the state’s infrastructure as roads and buildings.

High-quality care connects child well-being, education and the present and future workforce.⁸ Child care affects every South Dakotan. A vital, \$100.6 million industry with multiple benefits, it spurs economic growth and development — now and into the future. Investments in quality child care yield high public returns. The child care industry is an integral part of this state’s economic development strategy. Integrating child-care planning into local, regional and state economic development plans makes good business sense.

When our kids thrive, we all benefit.

Licensed and registered child care generates over \$100.6 million in gross receipts in South Dakota.

APPENDIX A

South Dakota's Child Care Industry

• Family Child Care Home -

Registered: South Dakota law defines a Family Child Care Home as one in which care is given on a regular basis for any part of a 24 hour day to 12 or less children from more than one unrelated family. This includes any children under the age of 6 who are living in the home. Family child care is a service provided in the provider's home. Family child care providers are registered rather than licensed.

Registration is a voluntary process whereby the applicants declare their intent to provide family child care and agree to comply with standards that have been established by the Department of Social Services. A registration certificate is in effect for two years. Registration is legally mandated when a provider receives compensation from public funds. Providers who are not receiving reimbursement from public funds and caring for 12 or fewer children are exempt from registration. A registered family child care provider must be at least 18 years old.

• Group Family Child Care Home -

Licensed: South Dakota law defines a Group Family Child Care Home as a facility that provides child care for a part of a day as a supplement to regular parental care for 13 to 20 children from more than one family, including the provider's own children who are under the age of 6 years. A group family child care home may be located in the provider's own home or in a separate facility. Group family child care homes are mandated by law to be licensed regardless of the funding source.

• Child Care Center - Licensed:

South Dakota law defines a Child Care Center as a facility that provides child care for a part of a 24-hour day to 21 or more children from one or more unrelated families, including the provider's own children under the age of 6 years, regardless of the source of income. A child care center may be located in the provider's own home or in a separate facility. Child care centers are mandated by law to be licensed regardless of the funding source. A child care center may be operated as a nonprofit organization or as an independent, proprietary facility.

• Before- & After-School Care

Center, Licensed: Before & After School Care Centers provide care and supervision before and after school hours for 13 or more children who are five years of age or older and enrolled in school. Before & After School Care Center providers serve only school-age children and may be providing care for either part of a day or full-time during school breaks. Before- & After-School Care Centers are mandated by law to be licensed regardless of the funding source or location of the program. Centers are inspected each year.

• **Head Start:** Head Start is designed to foster healthy development in children from low income families. Programs deliver a range of services that are responsive and appropriate to each child's and each family's heritage and experience, encompassing all aspects of a child's development and learning.

Head Start began in 1965 as a summer program by the federal Office of Economic Opportunity. Designed to help break the poverty cycle, it provided a comprehensive program to meet emotional, social, health, nutritional and psychological needs of preschool children from low-income families. Educators, child development specialists, community leaders and parents recognized the value of the program. Head Start operates in all fifty states, the District of Columbia, Puerto Rico, and the U.S. Territories. Presently, Head Start is a program within the Administration on Children, Youth and Families in the Department of Health and Human Services. The program is locally administered by community-based non-profit organizations and school systems. There are 16 regional and Tribal Head Start sites in South Dakota.

APPENDIX B

IMPLAN Input-Output Model

Estimates for the impact of child care services on indirect and induced earnings and other productivity effects are based on the application of the 2003 South Dakota Module of the IMPLAN Input-Output model. Initially developed for use by the U.S. Forest Service, IMPLAN is now used in many fields.

Input-Output models use area-specific data on industrial and commercial activity to trace the linkages between

industries. IMPLAN is based on a table of direct requirement coefficients which indicate the inputs of goods and services from various industries required to produce a dollar's worth of output in another, single industry. Standard economic "production functions"—the capital, labor and technology needed to produce a given set of goods—determine how changes occur in one industry.

IMPLAN contains more than five hundred economic sectors, and economic census data to compile regional economic information. National data are adjusted for the industrial and trading patterns for the subject region. Based on this structure, IMPLAN estimates the regional economic impact that would result from a dollar change in demand of a particular industry.

The multiplier effect estimates the links between an industry and other areas of the economy. For this report, Type II multipliers, which exclude government spending, are used. Estimates for the impact of child care on the economy are based on three primary types of multipliers:

- Direct effects: Effects introduced into the state's economy as a result of spending on child care services.
- Indirect effects: Effects reflecting spending by the child care industry
- Induced effects: Effects on goods and services consumed by households with direct and indirect income support from an industry. These effects reflect changes in the state's economy caused by changes (for instance, increases) in spending patterns as a result of the direct and indirect activity.

APPENDIX C

Assumptions to the South Dakota Estimate

- The number of child care hours provided by licensed or registered service providers. This information has its roots in the Social Services "Child Care Market Rate Study".
 - The data suggests that split between full-time and part-time care is approximately two-thirds and one-third respectively. Two-thirds are full time and one-third is part time.
 - The average number of hours for delivery of full-time child care is assumed as follows:

- Family – 45.0 hours
- Center – 44.0 hours
- Group – 43.8 hours
- School Age – 18.9 hours
- The part-time number of hours is assumed to be 50 percent of full time short of any source of data to refine the estimate.
 - Family – 22.5 hours
 - Center – 22.0 hours
 - Group – 21.9 hours
 - School Age – 9.5 hours
- The number of children served part-time and full-time by licensed or registered providers is estimated to be 34,345 (23,429 x 1,334/910 or survey child numbers times pop/responses) *(Please note that any differences are due to rounding.)*
- The number of child care service hours provided by licensed or registered providers is estimated to be approximately 58.4 million hours a year. (39.9 million x 1,334/910)
- The revenues to the licensed and registered providers are estimated to be \$100.6 million a year. (\$68.7 million x 1,334/910). *(Please note that figures may be different due to rounding.)*
 - The state has \$13.3 million in federal, 2.3 state and 0.7 other funds a year to spend on child care in calendar year 2003. It spends that amount on commercial provider services, administration of the program, quality improvement, and licensing activities and relative/family service providers.
 - Individuals paid an estimated \$91.8 million for child care services in CY 2003.
 - During that year an additional \$18.4 million was spent on Head Start, an early education program.
- What is the importance in an economic impact study of identifying where the state's funds are spent? It relates primarily to labor issues. Fewer state workers can be hired for a given amount of money than child care service providers. State workers salaries are higher on average. IMPLAN will allow our analysis to take this into consideration if the relative expenditure amounts are determined.
- Secondly, there is the issue of double counting of subsidy dollars. The subsidy dollars are being counted in the \$100.6 million revenues of the child care service providers. It is estimated that \$10.8 million of federal funds are passed through to service providers.
- While it is recognized that federal money flowing to the tribes is important, the point of this paper is to describe the non-tribal industry as best we can. More than \$5 million of federal money flows to the tribal Head Start programs in addition to child care money considered in this paper. There is also more than \$5 million flowing to the tribes as Child Care Development funds not considered here. While money invested by the tribes in child care is very important to development of children living in South Dakota, its impact lies outside the scope of this analysis and is presented as a footnote.
- The Head Start program is considered as an educational component and is treated as such in the economic impact estimate. Again, these programs require employees with higher average educational attainment and represent on

average a better paid group. As with state workers versus hands on child care service providers, this group makes more money on average and the number of people that can be hired for a given amount of funding will be different as will their spending patterns.

The Worksheet

The model for determining the gross receipts for licensed or registered child care providers is straight forward. One takes the number of qualified full-time children in child care times the average cost per year for child care and adds it to the average cost per year times the number of qualified part-time children.

$$\begin{aligned} & \text{Full Time Enrollment} \times \text{Average Cost/Child/Year} \\ + & \text{Part Time Enrollment} \times \text{Average Cost/Child/Year} \\ \hline = & \text{Gross Receipts} \end{aligned}$$

The largest challenge is in estimating the number of full-time and part-time children receiving care at these facilities.

Social Services conducted a survey of its licensed and registered child care providers. It identified 1,360 such providers in its records. It found that no more than 1,334 are currently providing services. Of the 1,334 licensed or registered child care service providers, 910 filled out the Child Care Market Rate Study. We can then look at the survey results to determine the number of children served in South Dakota and estimate the average cost per child per year. From that data it was found:

$$\begin{aligned} \text{Full Time Enrollment is } 16,168 \times \text{Average Cost/Child/Year is } 3,467.50 &= \$56,062,470 \\ \text{Part Time Enrollment is } 7,261 \times \text{Average Cost/Child/Year is } 1,733.75^* &= \$12,588,743 \\ \hline \text{Gross Receipts} &= \$68,651,213 \end{aligned}$$

**Part-time is assumed to be 50 percent of yearly hours defined as Full Time. (Please note that any differences are due to rounding.)*

The above child count is the sum of the total number of children cared for by the 910 providers responding to the survey. There were 16,168 receiving full-time child care and 7,261 receiving part-time child care for a total of 23,429. The estimated cost per year for full time child care (\$3,467.50) appears reasonable when compared to studies from other Midwestern states. The assumption that part-time care on average equals half-time care can be challenged but refinement will require additional survey data.

The \$68.7 million estimate is based on the responses of the 910 survey participants. Equating part-time to half-time is the singular step or leap in the estimate that is beyond the survey findings. With that exception the \$68.7 million estimate represents the responses of the 910 survey participants.

Non-response Consideration

The \$68.7 million estimate of revenues is an estimate for 910 survey participants. Social Services mailed out 1,360 questionnaires to licensed or registered child care providers. Twenty-six (26) indicated that they were not currently providing service leaving 1,334 to respond. What of the other 424 licensed or registered service providers (1,334 - 910) that did not respond to the survey? If that number is represented by the 910 that did respond, the total child care numbers can be adjusted by a factor just short of one and a half (1,334/910 = 1.466). With that adjustment, the estimated gross

receipts for the licensed or registered child care increases to \$100.6 million. The estimate:

Full Time Enrollment is 23,701 x Average Cost/Child/Year is 3,467.50 = \$83,183,885

Part Time Enrollment is 10,644 x Average Cost/Child/Year is 1,733.75* = \$18,454,267

Gross Receipts = \$100,638,152

*Part Time is assumed to be 50 percent of yearly hours defined as Full Time. (please note that any differences are due to rounding)

Government expenditures for child care and Head Start are estimated to have been \$34.6 million in CY 2003. That amount double counts \$10.8 million already included in the \$100,638,152 provider gross receipts number. With that amount netted out, the additional amount invested by government that is not accounted for in the \$100,638,152 is \$23,821,969.

Multiplier Estimation

The magnitude of economic activity resulting from expenditures in an economy is affected by both the source of the funds and how the funds are spent. Families with children that decide to purchase child care make that choice at the exclusion of some other use for that money. Money taxed from people in South Dakota communities and returned to South Dakota communities to support child care isn't new money but rather money to be redistributed. In both cases, these monies are not new to the state's economy and would have been spent albeit differently if child care wasn't purchased. For

2003 Estimated Investment in the South Dakota Child Care Industry

	Number of Providers	Full-Time Enrollment	Part-Time Enrollment	Hourly Total	Hourly Rate	Full-Time Annual Rate	Yearly Receipts	Total Yearly Receipts
Family Child Care Home-Registered	922	7,762	3,486	427,731	\$1.71	\$3,994		
Child Care Center-Licensed	172	9,156	4,112	493,335	\$1.89	\$4,332		
Group Family Child Care Home-Licensed	94	1,491	670	79,977	\$1.84	\$4,188		
Before & After School Care Center-Licensed	147	5,292	2,377	122,473	\$1.01	\$997		
Receipts Private Sources							\$89,865,230	
Receipts Federal Fund Sources							\$10,772,923	
Total Day Care Receipts to Service Providers								\$100,638,152
Total								
	Federal Funding	State Funding	Other State Funding					
Child Care Discretionary	\$5,682,315							
Child Care Development Mandatory Funds	\$1,710,801							
Child Care Development Fund Matching	\$4,083,173							
Head Start *	\$18,388,799							
TANF Funding	1,748,738							
Expenditures Federal Fund Sources							\$31,613,826	
State Maintenance of Effort		\$ 820,084						
Other State Match		\$ 1,496,936						
Expenditures State Fund Sources							\$2,317,020	
Bush Foundation			\$ 664,045					
Expenditures Other Fund Sources							\$664,045	
Total Day Care Government Expenditures								\$34,594,891
Total Government								
Total All Sources								\$135,233,043
Less Double Counting of Federal Funds								\$10,772,923
								\$124,460,121
Total								

*In addition to the non-tribal expenditures, South Dakota tribal governments invest over five million federal dollars in Head Start programming and an additional five million of Child Care Development Funds. This investment of more than ten million dollars does not include any additional money expended for capital projects, administration or any other subsidies received by the tribal governments or their tribal members.

this reason in the table below, there is no entry in the induced columns for private funds or state general funds. This view appears consistent with the popular literature.

The federal funding sources and the foundation money are external to the South Dakota economy and are considered new money. These dollars would not have been spent in the state had the federal government or the foundation not sent the money to support child care activities. The measure of induced spending resulting from the direct and indirect expenditures is consequently counted in the measure or aggregation of the multiplier.

Estimating Parent Purchasing Power

All states try to estimate the purchasing power of working parents using paid child care. This measure gives some perspective to the market demand of working parents in the economy for goods and services. States have attempted to estimate this market demand using various techniques. Each technique has its strengths and weakness. One thing that they have in common is that the source of income information for each state's estimate is reports from their state income tax. South Dakota does not have this information in that it does not have a state income tax.

Estimated Economic Impacts

Child Care Provider Level

	Gross	Multiplier	Direct	Indirect	Induced	Total	Multiplier
Private Fund Sources	\$89,865,230	Type 1	\$89,865,230	\$33,942,774		\$123,808,003	1.38
Federal Fund Sources	10,772,923	Type 2	10,772,923	4,069,014	3,492,669	18,334,606	1.70
	100,638,152		100,638,152	38,011,788	3,492,669	142,142,609	1.41

Head Start

Educational Expenditures	\$18,388,799	Type 2	\$18,388,799	123,256	10,236,142	28,748,197	1.56
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State Government Expenditures

State Dollars Child Care Operations	2,317,020	Type 1	2,317,020	145,835		2,462,855	1.06
Bush Grant Child Care Operations	664,045	Type 2	664,045	41,796	232,694	938,535	1.41
Federal Funds Child Care Operations	2,452,105	Type 2	2,452,105	154,338	859,266	3,465,709	1.41
	5,433,170		5,433,170	341,969	1,091,960	6,867,099	1.26

Total Economic Impact	\$124,460,121		\$124,460,121	\$38,477,013	\$14,820,771	\$177,757,905	1.43
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Child Care Multipliers					
	Direct Effects	Indirect Effects	Induced Effects	Type I Multipliers	Type II Multipliers
Output	1.00	0.31	0.12	1.31	1.43
Employment	1.00	0.09	0.05	1.09	1.14
Employment	Direct Effects	Indirect Effects	Induced Effects	Total Effects	
Private	89,865,230	3,399	361.4	-	3,760.4
Federal	10,772,923	407.6	43.3	48.4	499.3
Head Start	18,388,799	507.7	1.2	142.2	651.1
State Dollars	2,317,020	40.8	1.6	-	42.4
Bush Grant	664,045	11.7	0.5	3.2	15.4
Fed Funds	2,452,105	43.2	1.7	11.9	56.8
	124,460,122	4,410	410	206	5,025

