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and E-Rate Application Rates

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Empowerment Zones
and E-Rate Application Rates

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All errors, however, are the responsibility of the author.

Table of Contents

Executive Summary

This report analyzes the relationship between two important federal programs—the Universal Service Fund for Schools and Libraries (commonly known as the "E-Rate program"), designed to improve access to the Internet for schools and libraries, and the Empowerment Zone (EZ) program, designed to promote economic development in poor communities. We analyze administrative data that cover the first and second years of the E-Rate program. We find the following patterns in these data:

- **EZ Schools Are Taking Advantage of the E-Rate Program:** Schools in EZ communities generally apply for the E-Rate program at a higher rate than similar schools in other communities, even after controlling for poverty and urban location, which determine E-Rate funding eligibility. This pattern also generally holds true for application rates for the different types of services that are covered by the E-Rate program.

- **EZ schools have a high probability of getting E-Rate funds if they apply:** All EZ schools that applied for E-Rate received at least some funding in both years 1 and 2 of the program. In comparison, about 98 percent of schools nationwide were funded.

- **EZ Schools continue to apply at relatively high rates for Internal Connections:** Districts with EZ schools had high levels of applications for Internal Connections in both program years 1 and 2, even though application rates for these services fell in other districts.

Introduction

This report analyzes the relationship between two important programs of the federal government—the Universal Service Fund for Schools and Libraries (commonly known as the "E-Rate program") and the Empowerment Zone (EZ) program. The E-Rate program is designed to improve education and access to the Internet by providing discounts on the cost of telecommunications services and equipment to public and private schools and libraries. The EZ program is designed to help improve the business climate in poor areas of the country. While not directly related, both programs focus on developing relatively poor communities. In addition, by improving educational outcomes, the E-Rate program can help develop a community economically. Similarly, by improving the business climate, the EZ program is likely to help communities to better develop their educational resources. For these reasons, there are likely to be important interactions between these programs. In this report we look specifically at the E-Rate application rates of schools in EZ communities and compare these to the application rates of similar schools in other communities.

The Potential of E-Learning

A major goal of the E-Rate program is to increase the opportunities for schools to use e-learning (Internet-related technology for education). The potential of e-learning is the major focus of a recent report to the President and Congress of the United States (The Web-Based Education Commission, 2000) and the national educational technology plan (The U.S. Department of Education, 2000). The Commission report notes that Internet technology can help expand the range of educational opportunities available, allow for more individualized instruction, extend the learning day, reduce the cost of life-long learning, improve professional development of teachers, and provide more compelling and up-to-date content material to students of all ages. There are concerns related to privacy, unacceptable content available for children, and a lack of currently available research on how to best use technology in education. Nevertheless, the commission recommends moving forward to "make powerful new Internet

resources … widely and equitably available for all learners." With about $2 billion in annual funding, the E-Rate program is the largest federal initiative designed to accomplish this goal.

The E-Rate Program

The Universal Service Fund for Schools and Libraries—commonly known as the "E-Rate"—was created in 1996 as part of Public Law 104-104, the Telecommunications Act of 1996, to provide discounts on the cost of telecommunications services and equipment to all public and private schools and libraries. Eligible services range from basic local and long-distance phone services and Internet access to the acquisition and installation of equipment to provide network wiring within school and library buildings. Computer hardware and software, staff training, and electrical upgrades are generally not covered. Nearly $4 billion were committed to schools and libraries nationwide during the first two years of the program.[1]

As shown in Exhibit I**,** eligible schools and libraries may receive discounts ranging from 20 percent to 90 percent on eligible telecommunication services, depending on economic need and location (urban or rural). Economic need is based upon the percentage of students eligible for participation in the National School Lunch Program.[2]

Exhibit I: E-Rate Discount by Poverty Concentration and Urban/Rural Location

Poverty (Percent Students Eligible for Free and Reduced-Price Meals)	Discount: Urban Location	Discount: Rural (Non-urban) Location
Less than 1%	20%	25%
1% - 19%	40%	50%
20% - 34%	50%	60%
35% - 49%	60%	70%
50% - 74%	80%	80%
75% - 100%	90%	90%

[1] Year 1 covers the period from January 1998 through June 1999 and Year 2 goes from July 1999 through June 2000. Our data for Year 2 are incomplete, as some applications are still being funded.

[2] This can be calculated using the data used in this report (the Common Core of Data) or other federally approved alternative mechanisms contained in the Elementary and Secondary Education Act (ESEA).

The EZ Program

The EZ program is designed to help distressed communities develop economically and socially by providing grants and subsidized loans. The statutory basis for the program is laid out in the Omnibus Budget Reconciliation Act of 1993.[3]

This legislation also covers Enterprise Communities (ECs) which are similar to EZs, except that they receive far less funding per community. For instance, in 1994 six Urban EZs received $100 million each in grants and tax breaks, Cleveland and L.A. were awarded $450 and $174 million respectively, and the four rural EZs were awarded $40 million each. In contrast, 95 ECs designated in 1994 received only $3 million each.[4] These funding awards cover 10-year periods. So far the EZ and EC programs have provided a total of over $1.5 billion in performance grants and $2.5 billion in tax incentives to the designated communities.

The EZ grants and loans are given to encourage specific types of activities. Creating jobs within these communities is a major focus of the program. Employers in EZ communities can receive up to $3,000 per employee for hiring people who live within their EZ boundary area. In addition, the EZ program subsidizes public services such as environmental clean-up, crime reduction, roads, sewers, water systems, community centers, and health centers. Public school development and renovations are specifically covered,[5] providing the most direct link between the EZ and E-Rate programs.

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[3] H.R. 2264, Public Law 103-66, enacted 8/10/93, Sections 1391-1397d. Designation procedures, funding, eligibility, time frame, responsible agencies, etc., are all detailed there.

[4] Four additional ECs received somewhat higher funding levels. The 1999 EZ and EC recipients received similar amounts of funding.

[5] Schools in EZ communities are eligible for low-interest loans to cover school equipment, course development, staff training, and rehabilitation and repairs of school buildings.

The EZ communities were chosen in two rounds, with similar funding levels each year. In order to be designated an EZ, an area must be nominated by its state and local governments; include a strategic plan addressing economic, human, community, and physical development needs; meet federal eligibility requirements related to poverty, unemployment, and general distress;[6] and show full community partnership in the application process. Areas are selected based on meeting eligibility requirements and then on the effectiveness of their strategic plans.

The relationship between E-Rate application rates and EZ communities is of interest for two reasons. First, as explained above, EZ communities are located in communities with high levels of poverty and general economic distress. Similarly, the E-Rate program provides larger discounts to schools with higher fractions of low-income students (those students eligible for free or reduced-price lunch.) For these reasons we would expect to see higher fractions of schools applying for E-Rate in the EZ communities than elsewhere.

The second reason for expecting a relationship between the EZ and E-Rate programs would be if the EZ program caused an increase in E-Rate application rates. Indeed, the EZ program could help develop community resources necessary to mount effective strategies for developing technology locally and for developing the capacity to apply for the E-Rate program. For instance, EZ funding could be used to improve the general business climate in an area, to purchase technology that receives E-Rate discounts, to increase awareness about the E-Rate program, or to directly assist schools (and districts) applying for the program. For all of these reasons, we might expect E-Rate application rates for schools in EZ communities to be higher than for schools in other communities eligible for the same levels of E-Rate funding (based on their poverty and urban location).

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[6] This includes having a poverty rate of at least 20 percent and a maximum population of "(A) in the case of an urban area, the lesser of (i) 200,000, or (ii) the greater of 50,000 or 10 percent of the population of the most populous city located within the nominated area, and (B) in the case of a rural area, 30,000."

The main goal of the EZ program is to improve the business climate of an area. This may have an indirect effect on E-Rate applications if it increases the availability and awareness of technology in an area. As general demand for technology increases, economies of scale may cause prices to fall. In addition, as technology businesses move into an area, they may be more likely to come in contact with local schools and work with them to develop the schools' technological capacities.

The E-Rate program could also enable schools to purchase technology that receives E-Rate discounts. As mentioned earlier, the EZ program does provide low-interest loans to purchase school equipment. Also, E-Rate discounts can be used for technology purchased with federal money. This is because the program does not place any restrictions on the source of funding for the technology that receives E-Rate discounts. In addition, E-Rate funds are not, technically, federal money, so they can be used as part of matching funds in conjunction with federal funds that do require a nonfederal match.

The EZ program could also have a more direct effect on E-Rate applications by increasing awareness about the E-Rate program and directly assisting schools (and districts) applying for the program. We have some anecdotal evidence in this area. One EZ told us that it succeeded in connecting all of its schools to the Internet.[7] Another mentioned having an EZ-Technology initiative to get four Internet connections into each classroom in their area.[8] On the other hand, none of the 20 EZ websites we visited specifically mentioned the E-Rate program.[9]

The Administration has also taken steps to increase E-Rate participation rates in EZ communities. In the fall of 1995, President Clinton challenged the nation to work together to

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[7] This statement was on their website. The website also mentioned that AOL had given each of the schools up to five free accounts with unlimited usage for a period of one year.

[8] This statement was given by phone. They also mentioned having an E-mentoring program that connects 625 employees of local firms to students in two EZ schools with E-mail once per week and in-person contact once per month.

[9] In addition, we called 8 EZ offices and only one of the people who answered had heard of the E-Rate program. However, the people who answered the phones were seldom senior-level staff.

bring educational technology into every classroom, and the following year, Vice President Gore announced a similar initiative specifically for EZ schools. In April 1996, the Administration launched CyberEd, a national educational technology initiative in which a coalition of nonprofit, corporate, and private foundations combined to provide free hardware, connectivity, training, and Internet access to more than 400 schools in each of the 15 designated EZs across the United States. At each EZ, corporate and community leaders joined local educators to catalyze local commitment to educational technology, leading to offers from companies such as AOL, Microsoft, AT&T, and TECH CORPS to assist the EZs in achieving the goal of connecting all of their schools to the Internet. At the same time, Clinton issued Presidential Executive Order 12999, directing thousands of federal surplus computers to EZ schools. These actions, along with others such as Netdays and Techdays, may have provided valuable technology infrastructure to EZ schools and effected a more serious commitment to education technology in EZ communities. Having administrators and communities committed to education technology and a well-developed technology infrastructure probably put EZ schools in a much better position to take advantage of the benefits offered by the E-Rate program than they would have been otherwise.

Formative Evaluation of the E-Rate Program

This report, and a companion piece on schools serving American Indians (Chaplin, 2001), follows on an earlier formative report on the E-Rate program (Puma et al., 2000). The earlier report is part of a new initiative, funded by the Department of Education, intended to expand our knowledge of how technology is changing American education.[10] All three of these reports

[10] The multi-year ***Integrated Studies of Educational Technology (ISET)*** is being funded by the U.S. Department of Education's Planning and Evaluation Service (PES) and Office of Elementary and Secondary Education (OESE) as part of the continuing evaluation of the Technology Literacy Challenge Fund (TLCF). ISET is being conducted in collaboration with the department's Office of Educational Technology (OET) and the Schools and Libraries Division (SLD) of the Universal Service Administrative Corporation, which, under the direction of the Federal Communications Commission, administers the E-Rate program.

are based on an analysis of E-Rate administrative records covering the first two years of program operation. These records were linked to detailed national data on all public and private schools and libraries in the United States (a combined total of nearly one million records).[11] A detailed discussion of these data, and how they were merged, can be found in the earlier report.

Analysis Plan

In this report we compare the E-Rate application rates of EZ schools to the application rates of schools that are unlikely to have been impacted by either the EZ or EC programs. We make this comparison in order to estimate the total impact of the EZ program on E-Rate application rates. Our comparison group of schools excludes all schools that are EZ schools or EC schools or in a school district that has either an EZ school or EC school because these schools might be affected, at least indirectly, by the EZ and EC programs. For instance, the EZ program might make it easier for a school district with an EZ school to apply for funds, which would increase the application rate of all schools in the district and not just the EZ schools. The EC program, although it provides far fewer dollars per community, could have similar effects.

EZ Data

To do these comparisons, we made two additions to the data used in Puma et al. (2000). First, we identified EZ schools using a list of schools that serve youth in EZ communities. This list was developed by the U.S. Department of Education based on direct contact with all of the EZ communities. Second, we merged in information on the zip codes of EC communities to identify possible EC schools (those with EC zip codes).[12]

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[11] Available from the U.S. Department of Education's National Center for Education Statistics.

[12] Both the school and zip code lists were provided to us by the U.S. Department of Education (USED). The zip code lists were obtained by USED from the U.S. Department of Housing and Urban Development (HUD), which oversees the EZ/EC programs.

In an earlier draft of this paper we also analyzed EC schools. However, we were only able to obtain data identifying EC schools for about 27 percent of the EC communities. Therefore we had to rely on zip codes to identify EC schools. We do not present these results for EC schools because an analysis of the EZ schools suggests that using zip codes identifies too many schools by a factor of more than four (see Appendix A for details).

To summarize, in this paper we compare EZ schools with comparison schools that are unlikely to be affected by either the EZ or EC program. In addition, we present totals, which include schools excluded from the comparison group.

Findings

Table 1

Table 1 presents the overall distribution of schools across the categories described above. EZ schools comprise only 0.6 percent of American public schools and enroll 0.9 percent of their students, suggesting that the EZ schools are somewhat above average in size,[13] but serve a very small fraction of the total student population. The excluded schools represent about 13 percent of schools and 16 percent of students. Finally, 87 percent of schools are in our group of comparison schools.

E-Rate application rates are presented in columns 3 and 4 of Table 1. About 92 percent of EZ schools applied for the E-Rate program in both years. In Year 1 only 73 percent of the comparison schools applied, and this only rose to 77 percent in Year 2. Schools in the omitted category applied at higher rates, but still well below the 92 percent rate of the EZ schools. Since EZ schools are located in high-poverty areas, it is not surprising that they have higher application rates than schools in any other category in both Year 1 and Year 2. This potential explanation is analyzed in Table 2 below.

[13] About 70 percent of all schools have more than 300 students per school compared to about 85 percent of EZ schools. At the other end of the distribution, about 14 per cent of all schools have fewer than 150 students, compared to only 6 percent of EZ schools.

Table 1 and Figure 1 also show that in all categories of EZ status, there were increases in the percentage of schools applying for E-Rate between Year 1 and Year 2 of the program, except for EZ schools, whose rate remained at 92 percent.

The last two columns of Table 1 provide funding rates (the rate of having funds committed given that a school applied). Virtually all the schools that applied got at least some funding[14]—98 percent of the applicants received funds in both Year 1 and Year 2. All EZ-school applicants were funded, and the comparison school applicants experienced a slight increase in funding, from 97 percent in Year 1 to 98 percent in Year 2.

Table 2

One explanation for the high application rates of EZ schools found in Table 1 is that the EZ program helped to catalyze the use of resources in ways that enabled EZ schools to take advantage of the E-Rate program. Another explanation is that the EZ schools were eligible for more E-Rate funding than other schools and would, therefore, have had higher application rates regardless of whether or not they were in the EZ program. We investigate this possibility in Tables 2 through 5 by looking at differences in E-Rate application rates among schools eligible for the same E-Rate funding levels.

As shown in Exhibit 1, the E-Rate program provides discounts for purchases of certain types of telecommunications equipment and services. High-poverty schools receive much higher discounts than low-poverty schools, and rural low-poverty schools receive somewhat higher discounts than urban low-poverty schools. In Tables 2 through 5 we look at application rates of schools based on the approximate poverty and urban/rural categories used to determine the

[14] SLD staff informed us that many were only partially funded.

E-Rate discounts.[15] Schools within any row of Tables 2 through 5 are eligible for similar levels of E-Rate funding.

When we break our data down by poverty, urban location, and EZ status, we end up with 24 categories of schools. In order to focus our discussion on groups of schools that were reasonably large, we omitted numbers for all categories with fewer than 5 schools in Tables 2 through 5. This had the effect of leaving a number of categories empty for EZ schools. Since there are very few schools in these categories, they are of less substantive interest.[16]

Even after controlling for poverty and urban location, EZ schools have application rates substantially higher than our comparison schools (Table 2). This holds in both Years 1 and 2 of the program.

These results suggest that the EZ program did have an effect on E-Rate application rates. There is at least one possible alternative explanation. It could be the case that the EZ schools had higher poverty rates than reported in the CCD relative to the comparison group and were, therefore, eligible for more funding, even after controlling for poverty, as measured in the CCD. This is a plausible explanation for schools with less than 75 percent of their students on free lunch, but would not explain the results for schools in the highest poverty category, since having more than 75 percent poverty would not increase the school's E-Rate discount rate. As shown in Table 2, the application rate differences between EZ and comparison group schools are quite large even for the highest poverty rate category.

Tables 3-5

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[15] These are not exact because schools could use alternative measures of poverty to determine their E-Rate discount rate and did use a slightly different definition of rural location. These are discussed in Puma et al. (2000).

[16] In addition, we had to omit this information in order to protect the privacy of individual schools regarding whether any applied and were rejected. These schools are included in the totals.

Tables 1 and 2 describe application rates for any type of service. In Tables 3 through 5 we break down our numbers based on the type of service applied for to see if the patterns differ depending on the type of service. The E-Rate administrative data include information about three types of service: Internal Connections, Internet Access, and Telecomm and Dedicated Services. Internal Connections refers to the costs of wiring and related equipment. Internet Access refers to the direct charges for Internet access, and Telecomm and Dedicated Services refers to phone services.

Information on spending by service type was only available at the district level because of data constraints related to how the E-Rate administrative records are stored.[17] Therefore, Tables 3-5 are at the district level. This also means that the categories change to:

- *EZ Districts* (those with any EZ schools).
- *Comparison Districts* (districts with no EZ schools or EC zip codes).

As we did in Table 2, categories with fewer than five observations in Tables 3 through 5 were dropped. We ended up with more missing categories in Tables 3 through 5 than in Table 2 for two reasons. First, there are fewer districts than schools. Second, district poverty rates differ by less than school poverty rates, because district poverty is an average of school poverty rates.

Table 3

In Table 3 we present application rates for Internal Connections. *EZ Districts* generally have higher application rates for Internal Connections than the comparison districts overall, and by poverty and rural location, in both Years 1 and 2.[18] Internal connections are generally what schools with little infrastructure need first before they can fully take advantage of the other

[17] The data enable us to identify the types of funding going to each applicant, usually a school district, but not the funding going to each school unless the school applied on its own. See Puma et al. (2000) for more details.

[18] There is one exception. In rural areas with 50-75 percent poverty, *EZ Districts* had a lower application rate for Internal Connections in Year 2 than the comparison districts.

services that can be subsidized by the E-Rate program. For this reason, it is not surprising that the *EZ Districts* applied for these services at relatively high rates.

In most categories there was a decrease in applications for Internal Connections between Years 1 and 2 of the program, with the overall rate falling from 63 percent to 51 percent. This may be in part because SLD was not able to fund all applications for Internal Connections in Year 1, although it was able to do so in Year 2.[19] Interestingly, the application rate for Internal Connections by EZ districts fell by far less, going from 87 percent to 85 percent, suggesting that many of these schools continued to need more work on their Internal Connections than did other types of districts. Indeed, the application rates of high-poverty comparison districts also changed little between Year 1 and Year 2. This may be because the poorer school districts received the highest priority for Internal Connections in Year 1 and were, therefore, more likely to apply for Internal Connections in Year 2.

Table 4

In Table 4 we present application rates for Internet Access. Once again the EZ districts have much higher application rates than the comparison districts. This is true overall and by poverty. Between Years 1 and 2 of the program the EZ district rates went from 85 to 89 percent while the comparison district rates went from 57 to 68 percent. This general increase in application rates for Internet Access may be related to the fact that once schools have installed their Internal Connections, they are in a better position to make use of Internet Access.

Table 5

In Table 5 we present application rates for Telecomm and Dedicated Services. EZ districts have higher application rates for these services than the comparison districts. This holds true for the overall rates and by poverty and urban location. Overall applications for Telecomm and

[19] SLD had more funds in Year 2. In Year 1 it was only able to fund Internal Connections for applicants with a discount rate of 70 percent or above.

Dedicated Services increased from 73 percent in Year 1 to 81 percent in Year 2. EZ district application rates rose by less (from 89 to 91 percent) but were much higher in both periods.

Table 6

Another explanation for the high application rates of EZ schools might be their size, which was shown to be highly correlated with application rates in Puma et al. (2000). To analyze this, Table 6 presents application rates by size, year, and EZ status, again at the school level. Overall, the application rates for E-Rate funds generally increase with school size.[20] Within each size category, *EZ Schools* have higher application rates than the comparison schools in Year 1. In Year 2, however, the smallest EZ schools experienced a sharp drop in application rates, going from 63 percent to only 46 percent. At the same time, the small comparison schools go from 49 percent to 55 percent. On the other hand, these small schools comprise only about 6 percent of the 424 EZ schools.[21]

[20] This is true except in the highest size category (>1,000), which has application rates similar to those in the second-highest size category (300-1,000).

[21] 15 percent of all schools are small (have fewer than 150 students).

Conclusion

EZ schools have applied for the E-Rate program at higher rates than other types of schools. We see this pattern both in the overall application rates and in the application rates within groups of schools that receive similar levels of E-Rate discounts. Thus, the EZ program may be helping these schools to better take advantage of the E-Rate program.

We also find that Districts with EZ schools had high levels of applications for Internal Connections in both years 1 and 2 of the program, even though application rates for these services fell in other districts. This suggests that the EZ schools may have needed more help to develop their infrastructure than did other schools.

The EZ program is designed to help impoverished parts of our country develop economically. For this reason, it is encouraging to see that EZ schools are taking advantage of the E-Rate program. It suggests that the EZ program may be acting as a catalyst to help EZ communities better develop their technological capacity. In addition, the skills that EZ schools are developing to apply for the E-Rate program may be useful as they look for other ways to promote e-learning opportunities for their students[22] and thereby better develop the long-run economic strength of their communities.

[22] Additional information on this topic may be available from the ongoing ISET study of the U.S. Department of Education, described earlier and also in Puma et al. (2000).

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Appendix A: Why We Did Not Analyze EC Schools

EZ and EC communities are defined based on census tracts. Unfortunately, it was beyond the scope of this project (because of both financial and time constraints) to identify schools based on their census tracts. As explained above, we did have a complete list of EZ schools and used this in our analysis. To identify EC schools, we had only a list of EC zip codes. We considered treating schools with EC zip codes as EC schools. This method may yield a poor list of EC schools for two reasons. First, some schools will be incorrectly included. Second, some EC schools will be missed.

To estimate the potential magnitude of these two problems, we compared our list of EZ schools to a list of schools with EZ zip codes.[23] This comparison showed that using zip codes to identify EZ schools yields an incorrect sample for both of the reasons mentioned above. In particular, we identified over four times as many schools using EZ zip codes as appear on the EZ school list. In addition, a few EZ schools are missed using the zip code method. Similar problems would be likely if we were to use zip codes to identify EC schools.

As Table 7 shows, there are 2,401 schools with EZ zip codes compared to only 584 on the EZ school list. This means that using the EZ zip code list overstates the total number of EZ schools by a factor of over 4. There are 3,636 schools with EC zip codes. If the same ratio held for EC schools as for EZ schools, this implies that in reality there are only about 900 EC schools. Table 7 also shows that 27 of the 584 schools in the EZ list do not have an EZ zip code. Thus, using zip codes might also cause us to miss a few schools.

While we do not present results for the EC schools, we did analyze them in an earlier version of this report. The EC schools (based on zip codes) and schools in EC districts generally had application rates in between those of EZ schools and the comparison group, though the patterns were not as clear as those for EZ schools. Plausible reasons for the weaker relationship between E-Rate funding and EC schools include the measurement problems discussed here and the fact that the EC program provides far less funding per community.

[23] This was provided with the list of EC zip codes.

Appendix B: Tables and Figure

Table 1
E-Rate Application and Funding Rates
by Empowerment Zone (EZ) Status
Public Schools

	National Totals % of Total		E-Rate Applications Fractions of Schools			
	Schools	All Students	Applying		Funded if Applied	
EZ Status	92,453	46,817,214	Year 1	Year 2	Year 1	Year 2
EZ Schools	0.6%	0.9%	92%	92%	100%	100%
Omitted Schools	12.6%	15.8%	82%	85%	99%	99%
Comparison Schools	86.8%	83.3%	73%	77%	97%	98%
Total	100%	100%	74%	78%	98%	98%

NOTES:
(1) This table is based on funding applications made by January 4, 2000.
(2) Schools are counted as applying if they applied directly (as a billed entity) or indirectly (as part of a district or consortia).
(3) Fraction of schools funded is out of those that applied.
(4) Totals do not always match across tables because of missing values for the variables urban location, size and poverty.
(5) The definition of omitted schools is given in the text.

DATA SOURCES:
E-Rate application information from the Schools and Libraries Division of the Universal Service Administrative Company.
School data comes from the U.S. Department of Education's National Center for Education Statistics, CCD for 1997-1998.

Table 2
E-Rate Application Rates by Poverty, Urban Location, Year, and Empowerment Zone (EZ) Status
Public Schools

	% of Students Eligible for Free Lunch	EZ Status: EZ Schools	EZ Status: Comparison Schools	Total
Year 1				
Urban	< 1 %	57%	46%	46%
	1 to < 20 %	100%	79%	79%
	20 to < 35 %	97%	81%	82%
	35 to < 50 %	87%	81%	82%
	50 to < 75 %	98%	82%	82%
	75 % or More	92%	82%	84%
Rural	< 1 %	.	37%	37%
	1 to < 20 %	.	77%	77%
	20 to < 35 %	.	77%	77%
	35 to < 50 %	.	77%	78%
	50 to < 75 %	93%	77%	77%
	75 % or More	93%	68%	71%
Total for Year 1		92%	76%	77%
Year 2				
Urban	< 1 %	57%	50%	49%
	1 to < 20 %	100%	81%	82%
	20 to < 35 %	100%	83%	84%
	35 to < 50 %	89%	83%	84%
	50 to < 75 %	95%	83%	86%
	75 % or More	92%	85%	87%
Rural	< 1 %	.	37%	37%
	1 to < 20 %	.	81%	81%
	20 to < 35 %	.	81%	81%
	35 to < 50 %	.	82%	82%
	50 to < 75 %	87%	80%	80%
	75 % or More	87%	77%	79%
Total for Year 2		91%	79%	80%

NOTES:
(1) This table is based on funding applications made by January 4, 2000.
(2) Schools are counted as applying if they applied directly (as a billed entity) or indirectly (as part of a district or consortia).
(3) A "." indicates fewer than 5 observations in that cell.
(4) Totals do not always match across tables because of missing values for the variables urban location, size, fraction minority, and poverty.
(5) Urban refers to City or Suburban and Rural includes Small Town.
(6) Totals include omitted schools (see text for definitions).

DATA SOURCES:
E-Rate application and funding information from the Schools and Libraries Division of the Universal Service Administrative Company.
School data comes from the U.S. Department of Education's National Center for Education Statistics, CCD for 1997-1998.

Table 3
E-Rate Application Rates for Internal Connections
by Empowerment Zone (EZ) Status,
Poverty, Year, and Urban Location
Public School Districts

		% of Students Eligible for Free Lunch	EZ Status: EZ Districts	EZ Status: Comparison Districts	Total
Year 1	Urban	< 1 %	.	45%	44%
		1 to < 20 %	.	64%	64%
		20 to < 35 %	.	69%	69%
		35 to < 50 %	.	76%	76%
		50 to < 75 %	100%	75%	78%
		75 % or More	.	64%	64%
	Rural	< 1 %	.	22%	22%
		1 to < 20 %	.	65%	65%
		20 to < 35 %	.	65%	65%
		35 to < 50 %	.	64%	65%
		50 to < 75 %	80%	66%	67%
		75 % or More	90%	60%	61%
Year 1 Total			87%	63%	63%
Year 2	Urban	< 1 %	.	30%	29%
		1 to < 20 %	.	39%	39%
		20 to < 35 %	.	60%	60%
		35 to < 50 %	.	69%	68%
		50 to < 75 %	100%	71%	75%
		75 % or More	.	61%	61%
	Rural	< 1 %	.	15%	15%
		1 to < 20 %	.	42%	42%
		20 to < 35 %	.	54%	54%
		35 to < 50 %	.	62%	62%
		50 to < 75 %	60%	63%	64%
		75 % or More	90%	62%	63%
Year 2 Total			85%	50%	51%

Notes:
(1) This table is based on funding applications made by January 4, 2000.
(2) Districts are counted if they applied directly (as a billed entity) or indirectly (as part of a consortia).
(3) A "." indicates fewer than 5 observations in that cell.
(4) Totals do not always match across tables because of missing values.
(5) Urban refers to City or Suburban and Rural includes Small Town.
(6) Totals include omitted districts (see text for description).

DATA SOURCES:
E-Rate application and funding information from the Schools and Libraries Division of the Universal Service Administrative Company.
School data comes from the U.S. Department of Education's National Center for Education Statistics, CCD for 1997-1998.

Table 4
E-Rate Application Rates for Internet Access
by Empowerment Zone (EZ) Status,
Poverty, Year and Urban Location
Public School Districts

		% of Students Eligible for Free Lunch	EZ Status: EZ Districts	EZ Status: Comparison Districts	Total
Year 1	Urban	< 1 %	.	30%	30%
		1 to < 20 %	.	49%	49%
		20 to < 35 %	.	55%	54%
		35 to < 50 %	.	57%	58%
		50 to < 75 %	95%	54%	59%
		75 % or More	.	45%	45%
	Rural	< 1 %	.	25%	25%
		1 to < 20 %	.	63%	63%
		20 to < 35 %	.	62%	63%
		35 to < 50 %	.	61%	61%
		50 to < 75 %	80%	60%	61%
		75 % or More	100%	48%	50%
Year 1 Total			85%	57%	57%
Year 2	Urban	< 1 %	.	39%	39%
		1 to < 20 %	.	64%	64%
		20 to < 35 %	.	67%	67%
		35 to < 50 %	.	73%	73%
		50 to < 75 %	100%	66%	71%
		75 % or More	.	56%	57%
	Rural	< 1 %	.	28%	28%
		1 to < 20 %	.	71%	71%
		20 to < 35 %	.	73%	73%
		35 to < 50 %	.	74%	74%
		50 to < 75 %	80%	72%	72%
		75 % or More	100%	63%	65%
Year 2 Total			89%	68%	68%

NOTES:
(1) This table is based on funding applications made by January 4, 2000.
(2) Districts are counted if they applied directly (as a billed entity) or indirectly (as part of a consortia).
(3) A "." indicates fewer than 5 observations in that cell.
(4) Totals do not always match across tables because of missing values.
(5) Urban refers to City or Suburban and Rural includes Small Town.
(6) Totals include omitted districts (see text for description).

DATA SOURCES:
E-Rate application and funding information from the Schools and Libraries Division of the Universal Service Administrative Company.
School data comes from the U.S. Department of Education's National Center for Education Statistics, CCD for 1997-1998.

Table 5
E-Rate Application Rates for Telecomm/Dedicated Services
by Empowerment Zone (EZ) Status,
Poverty, Year, and Urban Location
Public School Districts

		% of Students Eligible for Free Lunch	EZ Status: EZ Districts	EZ Status: Comparison Districts	Total
Year 1	Urban	< 1 %	.	49%	49%
		1 to < 20 %	.	72%	72%
		20 to < 35 %	.	77%	77%
		35 to < 50 %	.	80%	80%
		50 to < 75 %	100%	75%	79%
		75 % or More	.	62%	63%
	Rural	< 1 %	.	35%	35%
		1 to < 20 %	.	78%	78%
		20 to < 35 %	.	76%	76%
		35 to < 50 %	.	75%	75%
		50 to < 75 %	80%	72%	73%
		75 % or More	100%	60%	62%
Year 1 Total			89%	72%	73%
Year 2	Urban	< 1 %	.	52%	52%
		1 to < 20 %	.	77%	77%
		20 to < 35 %	.	84%	84%
		35 to < 50 %	.	87%	87%
		50 to < 75 %	100%	82%	85%
		75 % or More	.	70%	71%
	Rural	< 1 %	.	38%	38%
		1 to < 20 %	.	85%	85%
		20 to < 35 %	.	87%	87%
		35 to < 50 %	.	86%	86%
		50 to < 75 %	90%	85%	86%
		75 % or More	100%	77%	78%
Year 2 Total			91%	81%	81%

NOTES:
(1) This table is based on funding applications made by January 4, 2000.
(2) Districts are counted if they applied directly (as a billed entity) or indirectly (as part of a consortia).
(3) A "." indicates fewer than 5 observations in that cell.
(4) Totals do not always match across tables because of missing values.
(5) Urban refers to City or Suburban and Rural includes Small Town.
(6) Totals include omitted districts (see text for description).

DATA SOURCES:
E-Rate application and funding information from the Schools and Libraries Division of the Universal Service Administrative Company.
School data comes from the U.S. Department of Education's National Center for Education Statistics, CCD for 1997-1998.

Table 6
E-Rate Application Rates by Size, Year and Empowerment Zone (EZ) Status
Public Schools

Size	EZ Status: EZ Schools	EZ Status: Comparison Schools	Total
Year 1			
0 to < 150	63%	49%	50%
150 to < 300	85%	75%	76%
300 to < 1000	95%	83%	83%
1000 or More	91%	82%	83%
Total	92%	76%	77%
Year 2			
0 to < 150	46%	55%	55%
150 to < 300	90%	79%	80%
300 to < 1000	95%	85%	86%
1000 or More	88%	84%	85%
Total	91%	79%	80%

NOTES:
(1) This table is based on funding applications made by January 4, 2000.
(2) Schools are counted as applying if they applied directly (as a billed entity) or indirectly (as part of a district or consortia).
(3) A "." indicates no observations in that cell.
(4) Totals do not always match across tables because of missing values for the variables urban location, size, and poverty.
(5) Totals include omitted schools (see text for definitions).

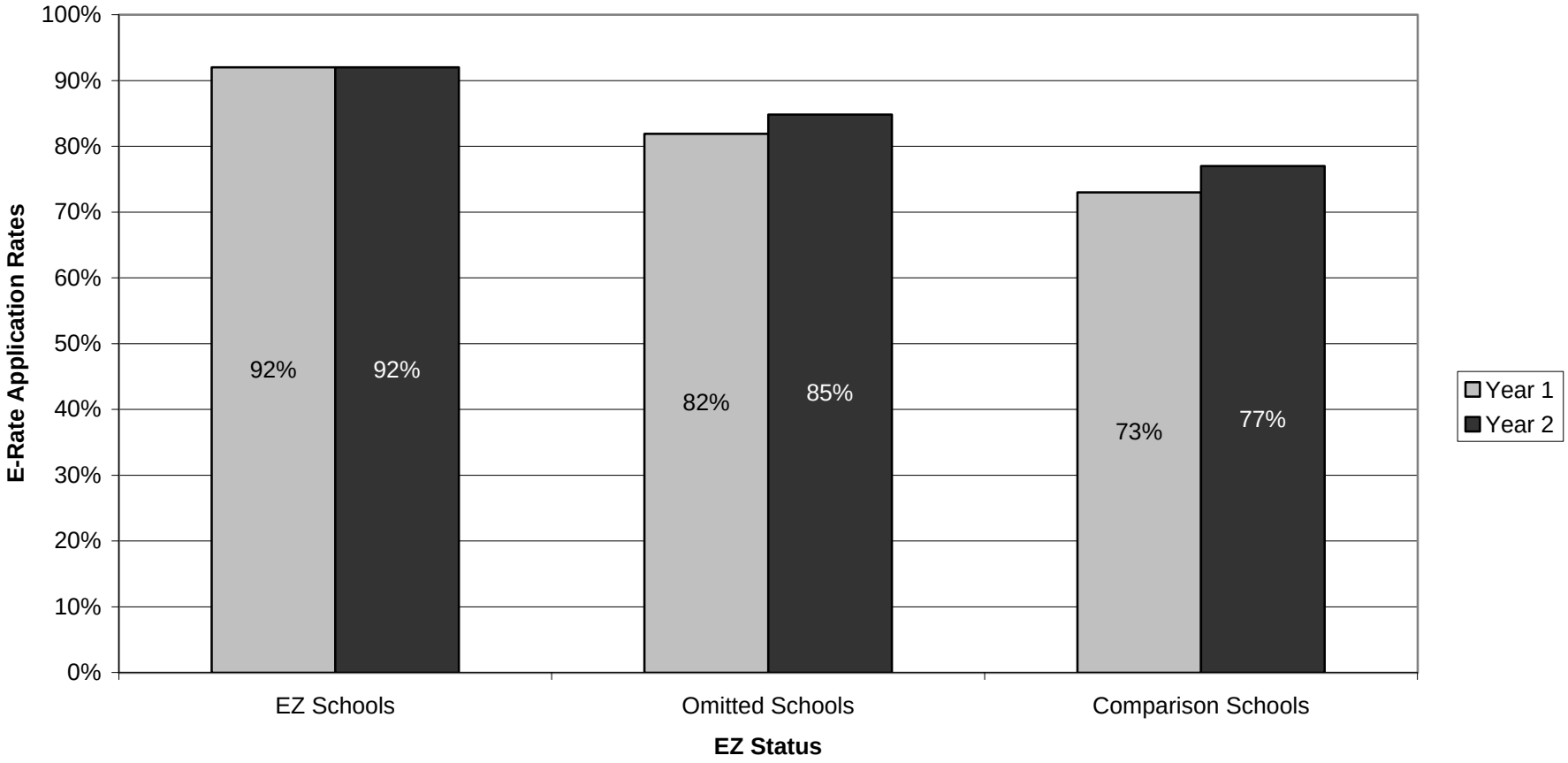
DATA SOURCES:
E-Rate application and funding information from the Schools and Libraries Division of the Universal Service Administrative Company.
School data comes from the U.S. Department of Education's National Center for Education Statistics, CCD for 1997-1998.

Table 7
Empowerment Zone Sample Sizes
by Method of Identification
Public Schools

On EZ School List	School with EZ Zipcode: No	Yes	Total
No	90025	1844	91869
Yes	27	557	584
Total	90052	2401	92453

DATA SOURCES:
E-Rate application and funding information from the Schools and Libraries Division of the Universal Service Administrative Company. School data comes from the U.S. Department of Education's National Center for Education Statistics, CCD for 1997-1998.

Figure 1: E-Rate Application Rates in Year 1 and Year 2 by Empowerment Zone (EZ) Status, Public Schools



NOTES: This table is based on funding applications made by January 4, 2000. Schools are counted as applying if they applied directly (as a billed entity) or indirectly (as part of a district or consortia). EC Schools are identified based on their zipcodes.

DATA SOURCES: E-Rate application information from the Schools and Libraries Division of the Universal Service Administrative Company. School data comes from the U.S. Department of Education's National Center for Education Statistics, CCD for 1997-1998.