



## **DOES THE DIGITAL DIVIDE STILL EXIST? Bush Administration Shrugs, But Evidence Says "Yes"**

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## I. INTRODUCTION

Throughout the 1990s, consumer and civil rights groups shared a strong concern with policymakers and opinion leaders over the concept of the Digital Divide. We strongly supported government efforts and programs designed to help bridge the gap between those who have access to computers and the Internet and those who do not. Our interest was grounded in the firm belief that Americans cut off from the benefits of digital technology will be severely disadvantaged in the new economy. We still believe that the divide exists and that it threatens to compound socio-economic and educational gaps by leaving low-income Americans ill prepared for the 21<sup>st</sup> century workplace.

Unfortunately, it appears the Bush Administration and others are pronouncing the Digital Divide closed. With the publication of the first computer/Internet supplement to the Current Population Survey (CPS) under the new administration, the Bush Administration appears to be interpreting the problem out of existence. The optimistic cover letter from the Secretary of Commerce declares "increasing numbers of Americans have integrated these technologies into their daily lives and are using them in a variety of places and for a wide range of activities."

Others have chimed in. In a recent op-ed piece, Robert Samuelson argued that the digital divide had been vastly overplayed and no longer existed, if it ever did.<sup>1</sup> Citing data from the CPS, he pointed to the fact that just under half of those with household incomes between \$15,000 and \$25,000 use a computer at home or at work. This is in contrast to about 90 percent of those who have household incomes above \$75,000.

The perception that there is no digital divide is not idle chatter; it has a direct and immediate impact. At his first press conference, the Chairman of the Federal Communications Commission, Michael Powell, belittled the "so-called" digital divide, by referring to it as a "Mercedes Benz divide," while reminding the press that rich people always get new technologies first.<sup>2</sup> Most recently, Chairman Powell told a group at Harvard University that his neighbors "yawn at the whole thing" when discussing important issues related to diversity of media viewpoints.<sup>3</sup>

The Bush administration has begun to cut back on programs that aimed to stimulate the penetration of these technologies to lower income individuals.<sup>4</sup> The Technology Opportunities Program (TOP) at Commerce and the Community Technology Center initiative (at Education) are slated for elimination in the 2003 budget.

A close look at the data shows that the perception that the digital divide has disappeared is simply wrong. Consequently, the claim that we no longer need policies to close the gap is wrong, placing tens of millions of American households at risk of being left out of the digital information age.

We begin our dialogue with the Bush Administration, by demonstrating four basic facts about the digital divide with the new data.

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<sup>1</sup> "Debunking the Digital Divide" Washington Post, March 20, 2002.

<sup>2</sup> Press Conference, February 8, 2001.

<sup>3</sup> "FCC Chairman: Consolidation hasn't Inhibited Variety, Fairness" Boston Globe April 17, 2002.

<sup>4</sup> "Digital Divide Plan in Peril" Washington Post, February 5, 2002.

- We first discuss how the problem should be defined and why it is so urgent.
- We then demonstrate that the digital divide is very real.
- Next, we show that being disconnected has a major impact on the ability of people to conduct all facets of daily activity effectively in the Internet Age.
- Finally, we demonstrate that the problem is still primarily an economic issue, although race, ethnicity and age play a role as well.

## II. DEFINING THE PROBLEM AND APPRECIATING ITS URGENCY

Because our society is not a “café” culture, most personal business is conducted from the home. Searching for information, looking for a job, and entertainment activities (especially TV viewing) are typically done in the privacy of the residence. For this reason, we have measured the digital divide, as we have measured universal telephone service, by the availability of the means of communications (telephone or the Internet) in the home. Stopping by the library to use the Internet or using it at work, may be transitional steps useful for creating skills in the population, or carrying out specific tasks associated with the activities of those locations, but they are not a replacement for its availability in the home.

By this measure, a sharp divide still exists between those who have computers and access to the Internet at home and those who do not. It can be said that we have finally reached the halfway point in residential Internet availability. Half the population has the Internet at home. Of course, that means that half the population does not have the Internet at home. It is far too soon to declare victory. The idea that we should be satisfied with the Internet trickling down over the course of decades should be rejected. The urgency with which we approach the need to close the gap faster reflects two important characteristics of the Internet Age.<sup>5</sup>

First, it is well recognized that things happen much more quickly in cyberspace. If a household is cut off for a decade, its ability to participate and prosper in the new economy may be permanently impaired. If a group is not well represented as the architecture of the Internet becomes defined and the patterns of deployment established, the needs of the group may never be well represented in cyberspace.

Second, the convergence of commerce and communications in the digital information age gives this technology a special transformative power. The Internet is not just communications or just a means of commerce. It promises to enhance productivity in many aspects of life. It provides communications (e.g. e-mail and instant messaging); may be a new form of mass media (e.g. list serves and news groups) and a major source of Information (e.g. personalized home pages and out of town broadcasts).

This leads directly to the second major point of emphasis in our analysis. It is what people can do with the Internet that makes it so important and makes closing the divide so critical.

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<sup>5</sup> Cooper, Mark N. “Inequality in Digital Society: Why the Digital Divide Deserves All the Attention it Gets,” *Cardozo Arts and Entertainment Law Journal*, 20:1, 2002.

We reject the argument of some critics of the digital divide concept, who claim we should not worry because Internet access is spreading as rapidly as some consumer appliances, like TVs and VCRs. Access to the Internet is much more important than access to a VCR. It may be an overstatement to say that the Internet changes everything, but it changes a lot of important things. Not having access seriously disadvantages the household.

The remarkable power of the digital technologies to transform society stems from the ability of digital communications, high-powered computers and high-capacity networks render every sound, symbol, and image in computer-compatible form and transmit it over great distances. The more complex the sound or image, the more data has to be encoded and decoded to accomplish the digital representation, but when computing speeds, storage capacity and transmission rates become big enough, fast enough, and cheap enough, it becomes feasible to move huge quantities of voice, data, and video over vast distances. As the costs of communications decline the ability to communicate is embedded in more and more smart equipment and appliances. The movement of data replaces the movement of people and interactions or transactions that once were locked in physical space and now take place in cyberspace.

Acquisition of these newly powerful means of communications becomes the central determinant of participation in the digital information age. Routine use of these technologies make for more efficient consumers and more effective citizens.

Is the glass half empty or half full? Given the importance of the Internet across a wide range of activities, the speed with which things develop in cyberspace and the emerging indications of another digital divide on the high-speed Internet, we must say the glass is half empty and in need of filling.

### **III. THE DIGITAL DIVIDE EXISTS IN ALL THE CONVERGING DIMENSION OF DIGITAL SOCIETY**

Robert Samuelson dismisses the digital divide because just under half of those with incomes between \$15,000 and \$25,000 use a computer at home or work, compared to around 90% with incomes above \$75,000. Asking a person whether they have access to a computer at work in 2002 is the equivalent of asking someone whether there was telephone in their place of employment in 1950. The answer was yes, but 40 percent of the people did not yet have telephone service at home. That was not universal service.

We have a different view (see Exhibit 1). Less than one-quarter of those with incomes below \$25,000 have the Internet at home, while over three quarters of those with incomes above \$50,000 do. This sharp contrast between lower and upper income households represents a very substantial divide in the population. Just under one third of the households in the nation have incomes below \$25,000. Almost exactly the same percentage has incomes above \$50,000.

If the Internet is becoming the major means of personal communications and commerce in the information age – then the digital divide can be clearly identified by comparing it to telephone service, which was the major means of personal communications in the industrial age (see Exhibit 2). Approximately 99 percent of households with incomes above \$50,000 have telephone service at home, whereas 91 percent of households with

incomes below \$25,000 have telephones at home. In other words, lower income households are four times as likely to have a telephone.

If the Internet is to be a major means of mass communications – the new mass media of the information age – then the digital divide can be clearly identified with respect to ownership of television (see Exhibit 3). Over 90 percent of all income groups have a television at home. Those with incomes below \$25,000 are much less likely to have the Internet at home. Again, lower income households are four times as likely to have a television.

If the Internet is to be a major means of gathering news and information in the digital information age, then the digital divide can be identified with respect to newspaper reading (see Exhibit 4). Approximately 88 percent of those with incomes above \$50,000 read a newspaper every day, very close to the 77 percent who have the Internet at home. In contrast, 64 percent of those with incomes below \$25,000 read a newspaper every day, which is over three times the percentage that has the Internet at home.

One of the cornerstones of the argument against the concern about the digital divide is the fact that access to the Internet has been spreading to lower income groups. One quarter of this group has gained access to the Internet at home.

Nevertheless, the above analyses demonstrate that the gap remains large for “dial-up” or narrow band Internet service and a new source of the digital divide has already come into existence. While lower income households have been gaining access to the narrowband Internet, the Internet has not been standing still (see Exhibit 5). Upper income households have moved on to high speed Internet service. The percentage of upper income households (incomes above \$75,000) that already take high-speed Internet is as large as lower income households (incomes below \$25,000) that take narrowband Internet at home. In other words, lower income households have fallen a full generation of technology behind.

Given this, the claim of the Secretary of Commerce rings hollow

Broadband connections are also on the rise. These high-speed connections will make it easier for people to engage in distance learning programs or telemedicine and to access a whole new array of entertainment and services that are on the horizon.

If all this is on the horizon, then the broadband Internet will not be a mechanism for increasing equality and spreading opportunity, it will be a case of the rich getting richer.

The seeds of a continuing digital divide have already been planted. Moreover, the policies being pursued by the Administration, which would allow these networks to be operated on a closed proprietary basis and priced at whatever the market will bear, leave little prospect of a significant improvement in the accessibility of these services for lower income households.<sup>6</sup>

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<sup>6</sup> Federal Communications Commission, “Notice of Proposed Rulemaking,” *In the Matter of Appropriate Framework for Broadband Access to the Internet Over Wireline Facilities, Universal Service Obligations of Broadband Providers, Computer III Further Remand Proceedings: Bell Operating Company Provision of*

## IV. BEING DISCONNECTED MEANS BEING DISADVANTAGED

In our earlier analysis of the digital divide, we emphasized the impact that being disconnected has by cutting households off from activities in cyberspace. We did this by comparing the rates of activity in physical space to those in cyberspace.<sup>7</sup> Unfortunately, the Current Population Survey asked only questions about cyberspace activities. Therefore, we will compare our earlier physical space and cyberspace results to the cyberspace activities measured by the CPS.

Before we begin, however, it should be noted that there is at least an implicit basis of comparison in the exhibits already presented. Just about everyone has a phone at home and makes a call every day (on average about 5 per day). Similarly, just about everyone has a TV and watches every day (the average households has it on 7.5 hours per day). Similarly, among lower income households two-thirds report reading the newspaper every day, while among upper income households about four-fifths do. In short, there is a lot of communications and media activity in physical space by all households.

The CPS asked whether people had used the Internet this year for a specific purpose. This is not a very refined measure of use, but the differences between those who have the Internet at home and those who use it elsewhere are substantial (see Exhibit 6).

Since the places that the Internet is accessed outside the home are schools, libraries and on the job, it is not surprising to find that the smallest differences between those who use the Internet at home and those who use it outside the home are for school work and taking courses. Nevertheless, those with the Internet at home were between 20 and 30 percent more likely to say they used it for these purposes.

The differences in other activities are much larger, generally running in the range of 40 to 60 percent. On average, those with the Internet at home are 1.5 times as likely to say they used it for these 13 purposes, than those who use it outside the home.

To summarize we can say that about 45 percent of the population does not use the Internet at all. About 45 percent of the population has it at home and uses for many purposes. Another 10 percent does not have it at home and uses it outside the home, but uses it much less often for these purposes.

What the CPS data does not give us is a way to measure the relative deprivation by directly comparing cyberspace activities to physical space activities. Our earlier analysis included this dimension and Exhibit 7 presents several activities that are direct parallels to the items included in the CPS survey. It shows the ratio of use for respondents who say they participated in an activity in the last year for those with the Internet at home and those without. It shows both the prevalence (p=percent saying the undertook an activity) and the frequency (f=number of times per week). Two critical observations emerge.

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*Enhanced Services; 1998 Biennial Regulatory Review – Review of Computer III and ONA Safeguards and Requirements.*, CC Docket Nos. 02-03, 95-20, 98-1, February 14, 2002; *In the Matter of Inquiry Concerning High Speed Access to the Internet over Cable and Other Facilities, Internet Over Cable Declaratory Ruling, Appropriate Treatment for Broadband Access to the Internet Over Cable Facilities*, GN Docket No. 00-185, CS Docket No. 02-52, March 15, 2002.

<sup>7</sup> Cooper Mark and Gene Kimmelman, in Benjamin M. Compaine (ed.), *The Digital Divide* (Cambridge: MIT Press, 2001);

First, the difference between the groups in physical space activity is not very large. That is, there was a relative equality of activity in physical space. For newspaper reading the difference is about 10 percent, for magazines and visits to government offices, it is about 25 percent. The differences in cyber space are much larger. Those with access at home are two to three times more likely to use the Internet for these purposes. Not having access matters.

Second, the differences in the amount of activity are larger than the differences in the prevalence of activity. That is, those without the Internet at home are able to occasionally perform a task, but those with it at home are better able to routinely engage in these activities. The frequency differences are at least as large as the prevalence differences. Further, when the frequencies are summed across physical and cyber activities, there are large differences in the quantity of activities. Those with access at home engage in 1.3 to 1.8 times as much activity. While we cannot be certain that the quality of information gathering on the Internet is as high, so that combining physical space and cyberspace activities on a one-to-one basis may not be appropriate, we can certainly say that the frequency of information gathering is dramatically different.

## **V. ECONOMICS IS THE CENTRAL DETERMINANT OF ACCESS**

Finally, and appropriately, it is important to recognize that the primary driver of computer ownership and Internet access at home is the economic situation of the household. Exhibit 9 shows this in a simple way by plotting the percentage of white and black households with the Internet at home against household income. At every income level, whites are somewhat more likely to have access to the Internet than blacks (about 10 percentage points). However, blacks with incomes above \$50,000 are much more likely (three times as likely) to have access than lower income whites. Put another way, upper income blacks are less likely to have computers than upper income whites (10 percentage points) but they are 50 percentage points ahead of lower income whites.

When a number of variables are considered together, income, educations and age are the three best predictors of access to the Internet at home (see Exhibit 10). While other variables, such as race, ethnicity, occupation, and household composition, still have a statistically significant relationship to Internet access, in a statistical sense they explain very little of remaining variation in access to the Internet. The results of this analysis are virtually identical when the dependent variable is the presence of a computer in the home.

The fact that economics, education and age of the householder are the driving factors in determining access should not obscure the fact that specific groups in our society suffer the deprivation of not having access. Blacks and Hispanics have much lower incomes, so they are particularly disadvantaged.

It should also not be assumed that those who do not have Internet at home do not want it or appreciate its value. In fact, for those who are most likely to need it, economics is the obstacle (see Exhibit 11).

Almost two-third of female heads of households with children say that they either cannot afford Internet or do not have a computer, compared to less than one-quarter who say they do not want Internet at home. In households without children, the percentages are reversed.

When we control for income, we discover that there is little difference between female-headed households with children and others types of households (see Exhibit 12). At each level of income they are generally as likely to have access at home. They are just a much lower income segment of the population (see Exhibit 13).

## **VI. CONCLUSION**

In our view, the fact that we have reached the halfway point in the diffusion of Internet access at home reinforces the need to seek policies to get the job done as quickly as possible. Rather than declaring victory and cutting back on efforts we should be refocusing efforts toward the acquisition of technologies at home.

In fact, passing the halfway point marks a milestone in the public policy status of Internet access. It is beginning to look like a service that merits the status of worthy of universal service support.

Universal service is an evolving level of telecommunications service that the Commission should establish periodically under this section, taking into account advances in telecommunications and information technologies and services. The Joint Board in recommending, and the Commission in establishing, the definition of the services that are supported by Federal universal service support mechanisms shall consider the extent to which telecommunications services –

- (A) are essential to education, public health, or public safety
- (B) have, through the operation of market choices by customers, been subscribed to by a substantial majority of residential customers;
- (C) are being deployed in public telecommunications networks by telecommunications carriers; and
- (D) are consistent with the public interest, convenience and necessity.<sup>8</sup>

The above analysis shows that the Internet certainly provides the essential functions identified by Congress and its ubiquitous availability promotes the public interest. The ability to fully engage in commercial, civic and political activity has already been deeply affected by the growth of the Internet and will become more so in the years ahead. Being disconnected means being disadvantaged and disenfranchised. Being connected is essential to educations, public health, public safety and consistent with the public interest, convenience and necessity.

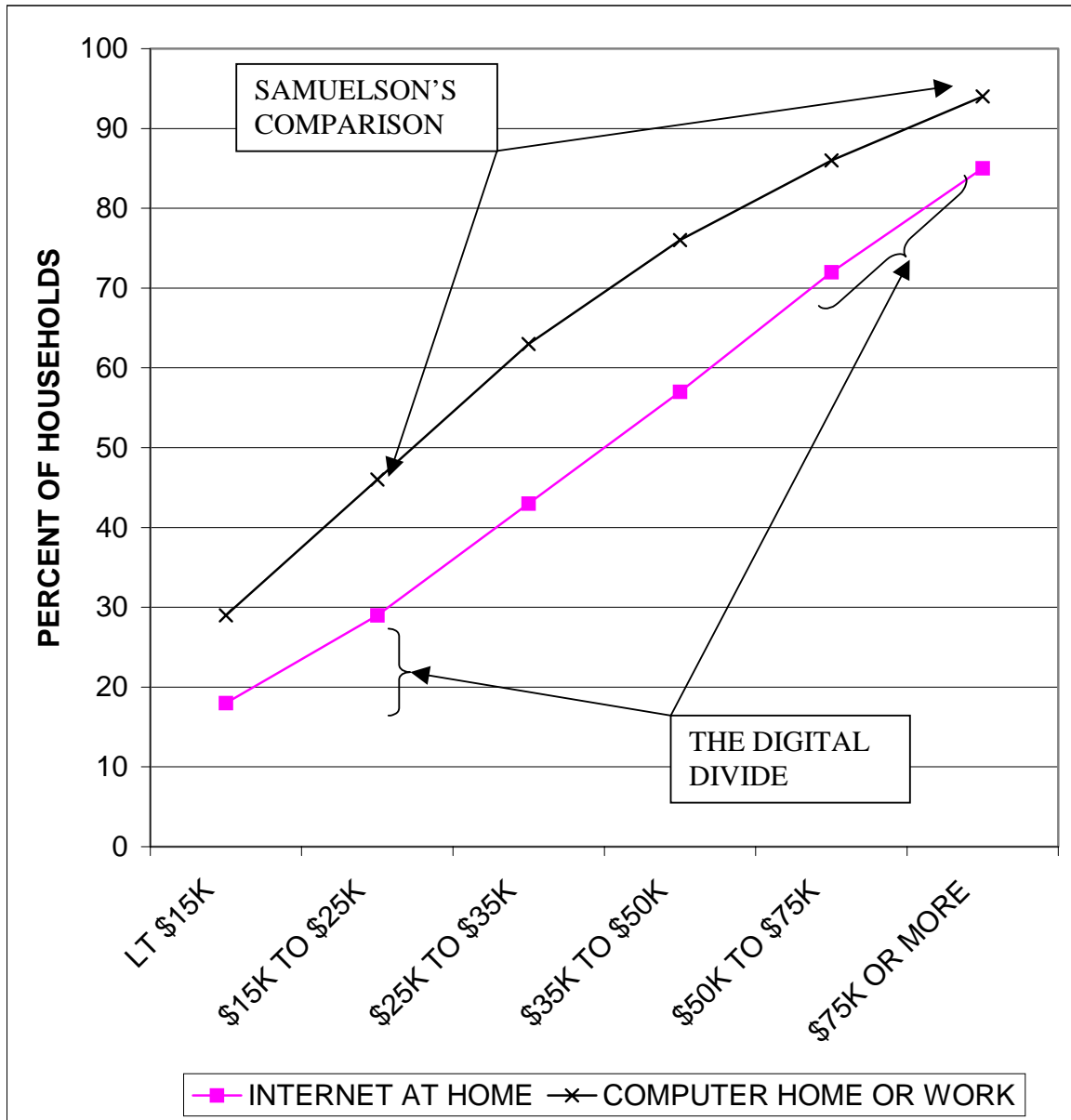
Obviously, the majority we have today may not be “substantial,” but passing the halfway mark sets a clock ticking for the Federal Communications Commission to consider explicit policies to achieve universal access to Internet access. It should certainly not turn its back on the policies that have helped to make this service available and useful to the public.

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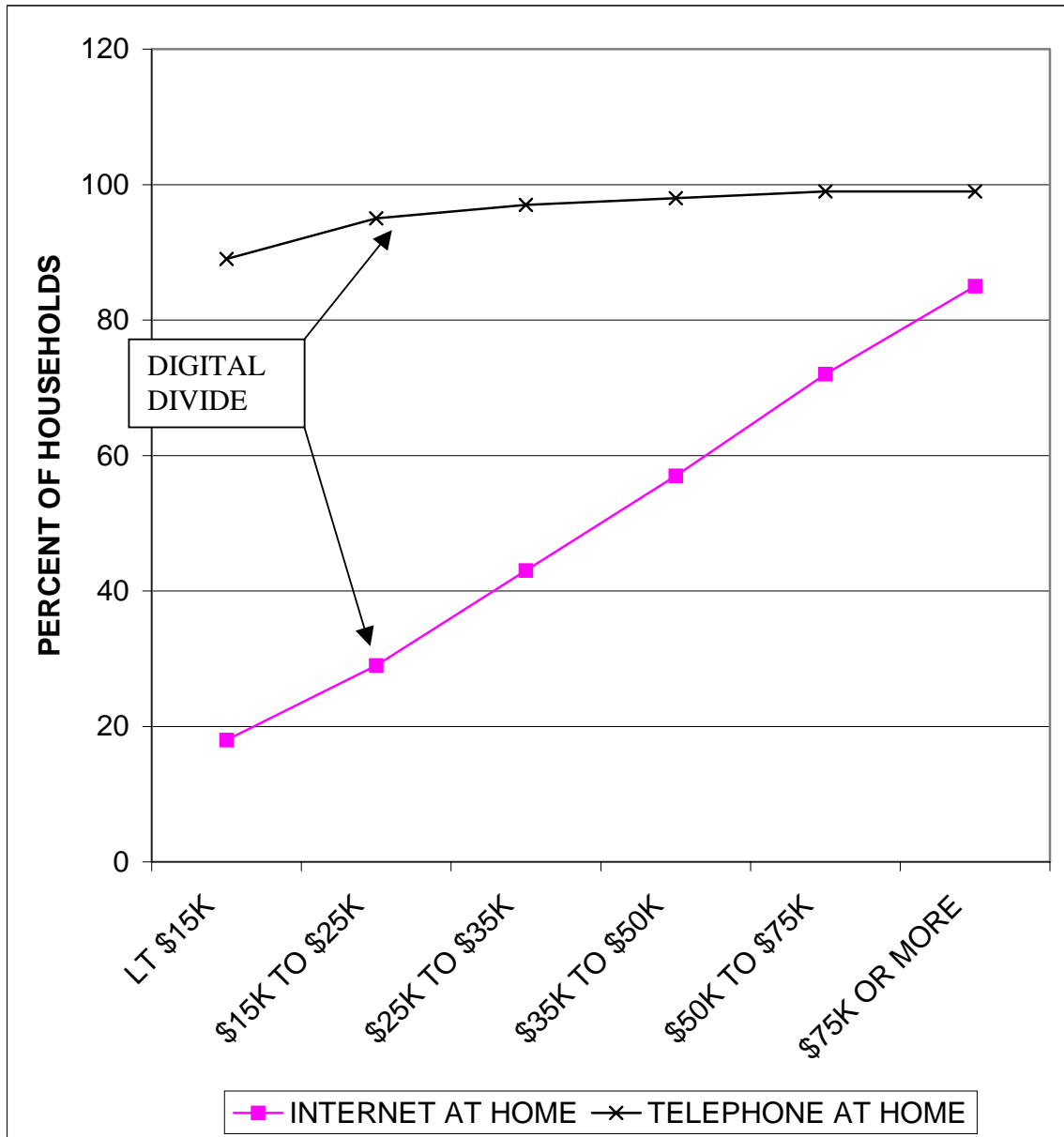
<sup>8</sup> 1996 Telecommunications Act, Section 254 (c).



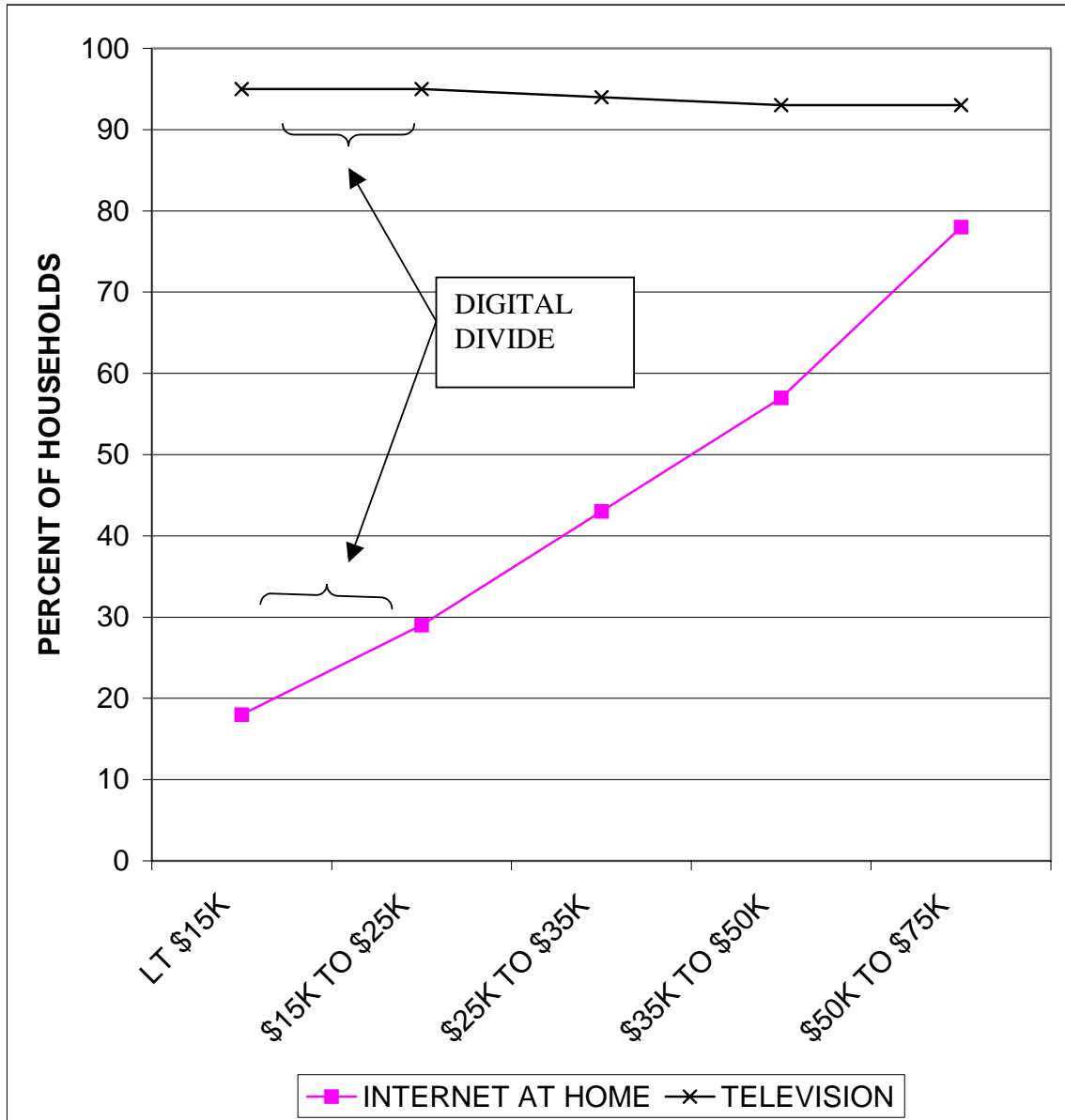
**EXHIBIT 1: INTERNET AS A “PRODUCTIVITY” ENHANCING DEVICE  
INTERNET AT HOME v. COMPUTER AT HOME OR WORK**



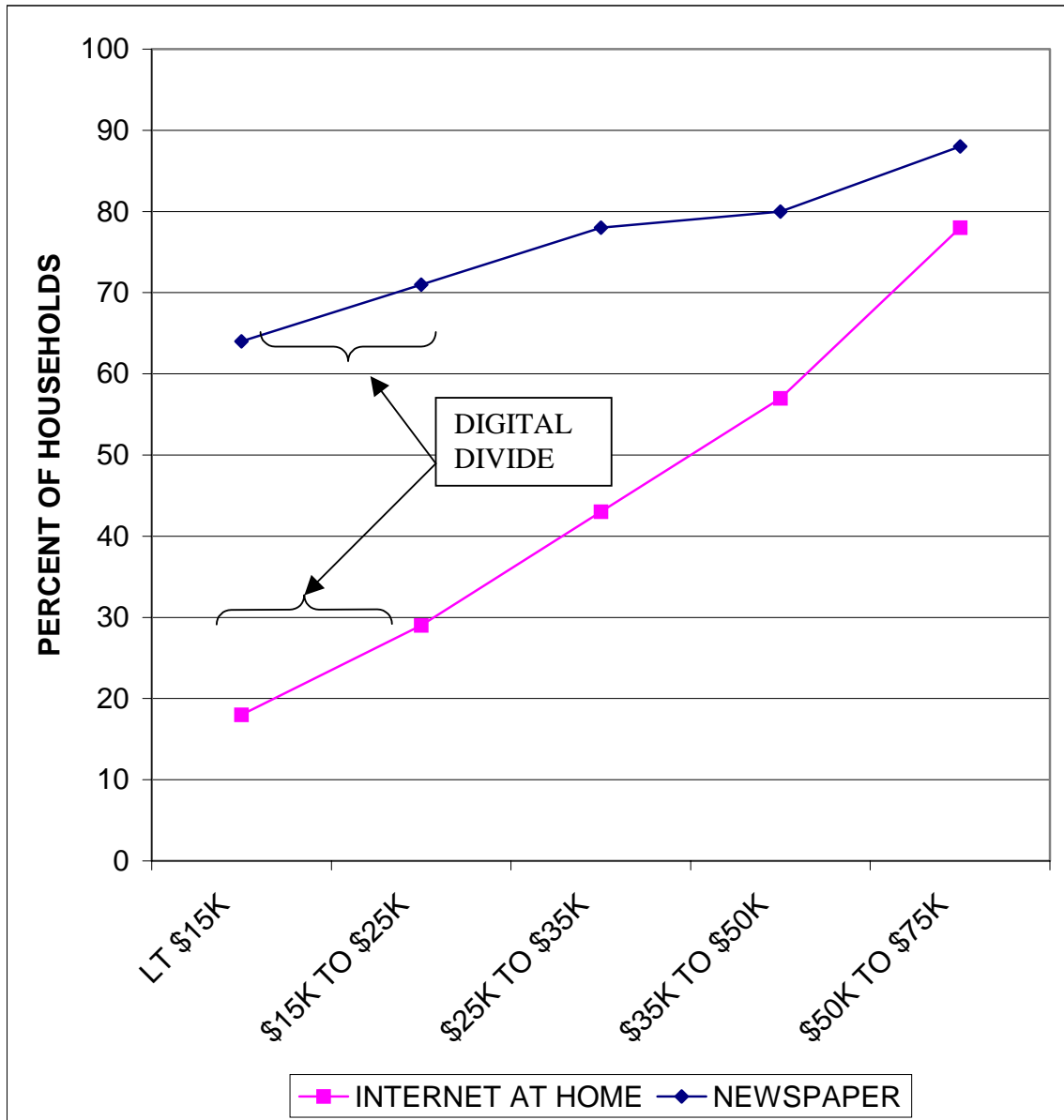
**EXHIBIT 2: INTERNET AS PERSONAL COMMUNICATIONS  
INTERNET AT HOME v. TELEPHONE AT HOME**



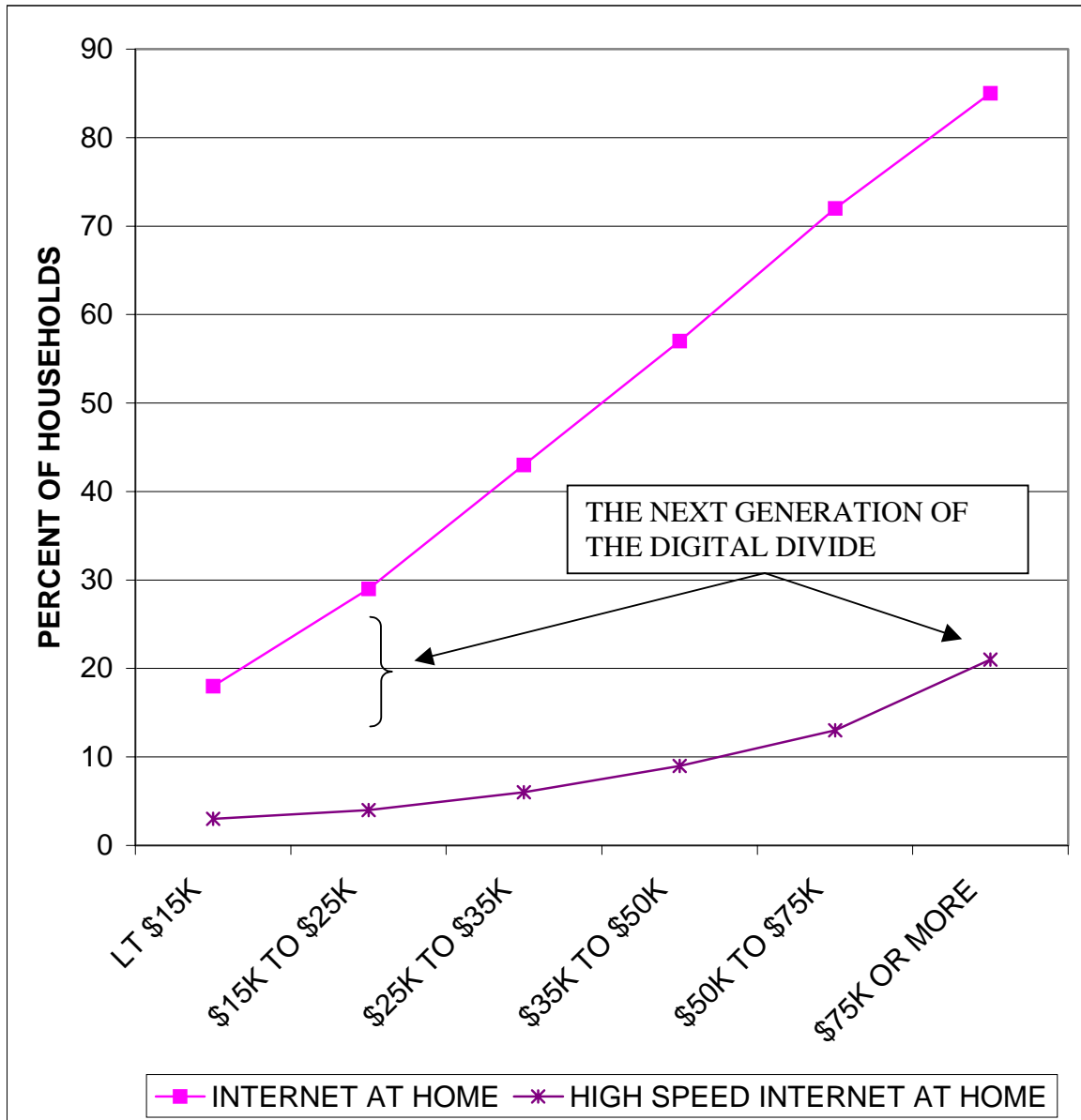
**EXHIBIT 3: INTERNET AS MASS MEDIA  
INTERNET AT HOME v. TELEVISION AT HOME**



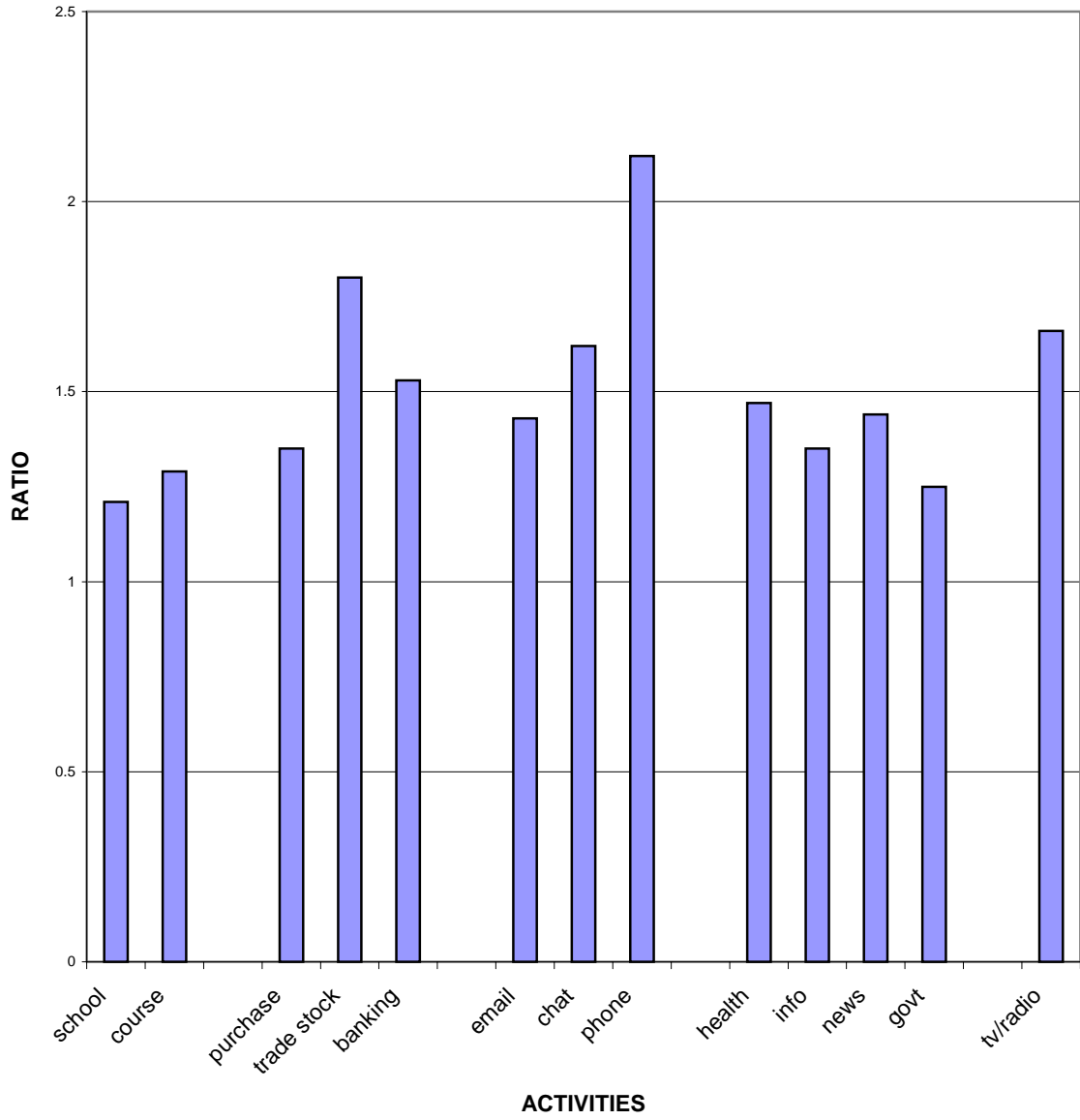
**EXHIBIT 4: INTERNET AS INFORMATION SOURCE:  
INTERNET AT HOME v. NEWSPAPER READING**



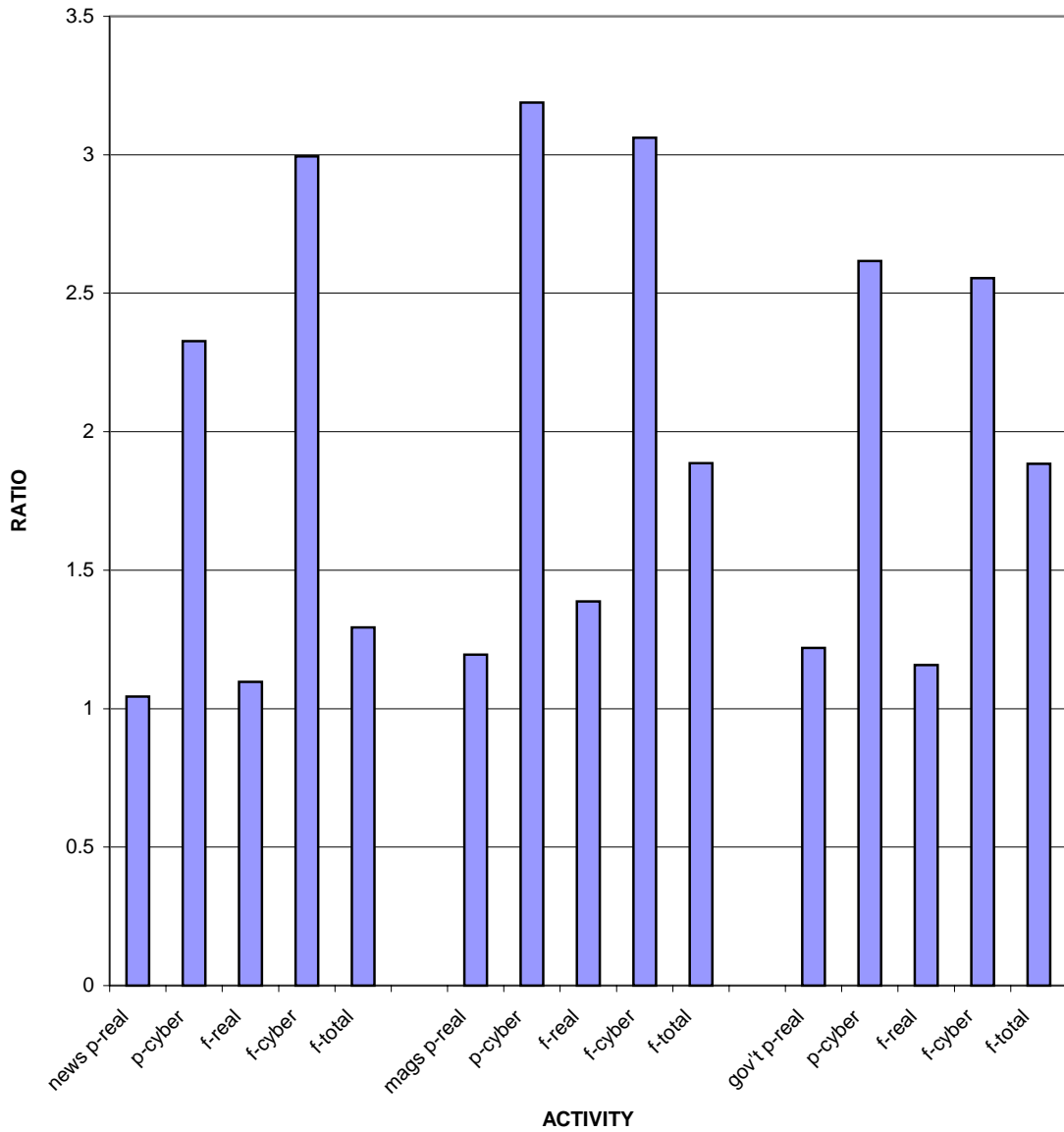
**EXHIBIT 5: INTERNET v. HIGH-SPEED INTERNET  
THE SEEDS OF THE NEXT DECADE OF THE DIGITAL DIVIDE HAVE ALREADY BEEN PLANTED**



**EXHIBIT 6: COMPARING CYBERSPACE ACTIVITIES TO THOSE WITH INTERNETS AT HOME TO THOSE WHO USE ELSEWHERE**

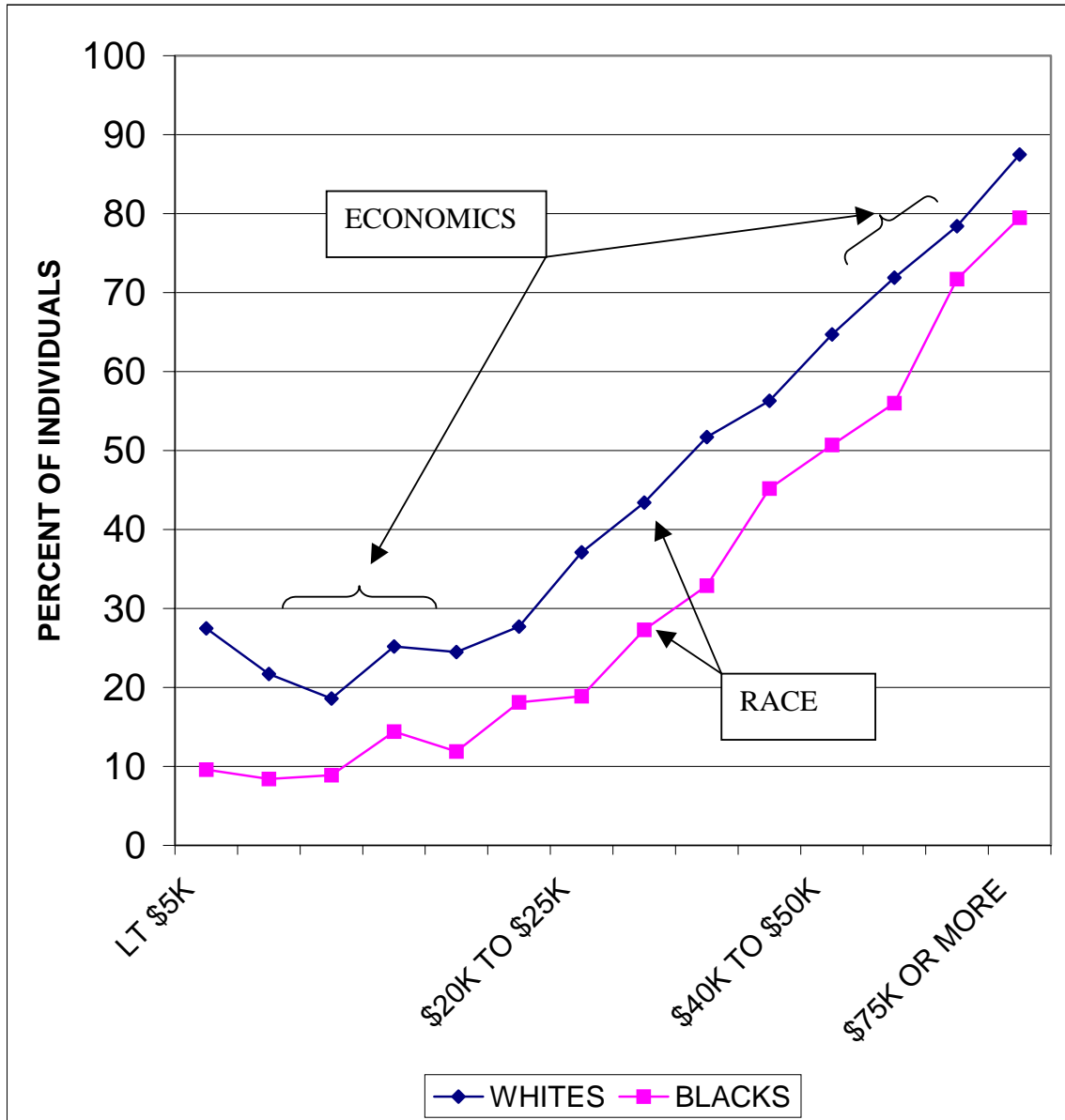


**EXHIBIT 7: COMPARING CYBER SPACE AND PHYSICAL SPACE ACTIVITIES FOR THOSE WITH INTERNET AT HOME TO THOSE WITHOUT**



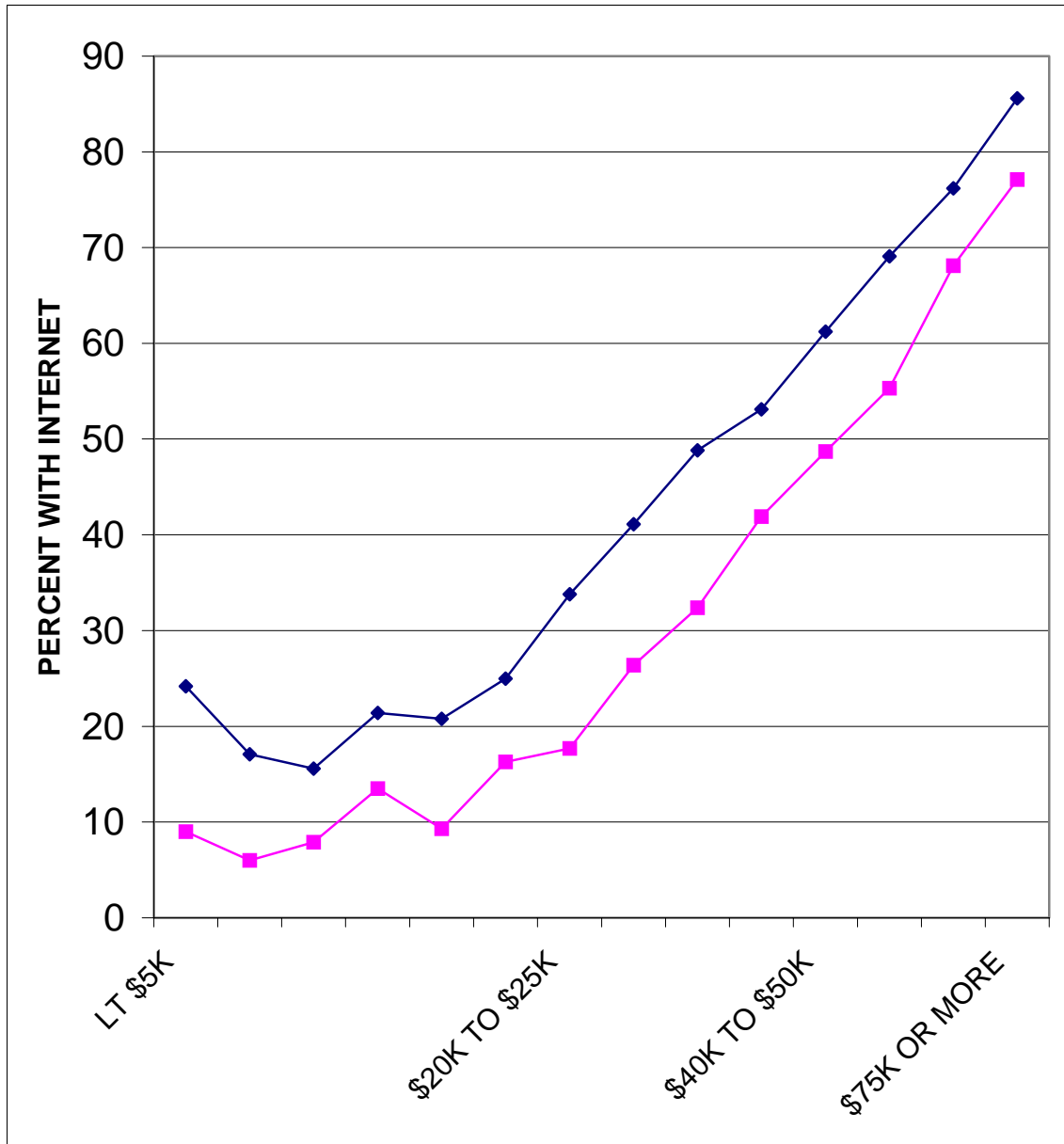
p – percentage saying they conducted an activity (at least once), f- frequency of activity, t – total frequency physical space and cyberspace.

EXHIBIT 8: INCOME, RACE AND INTERNET AT HOME FOR INDIVIDUALS

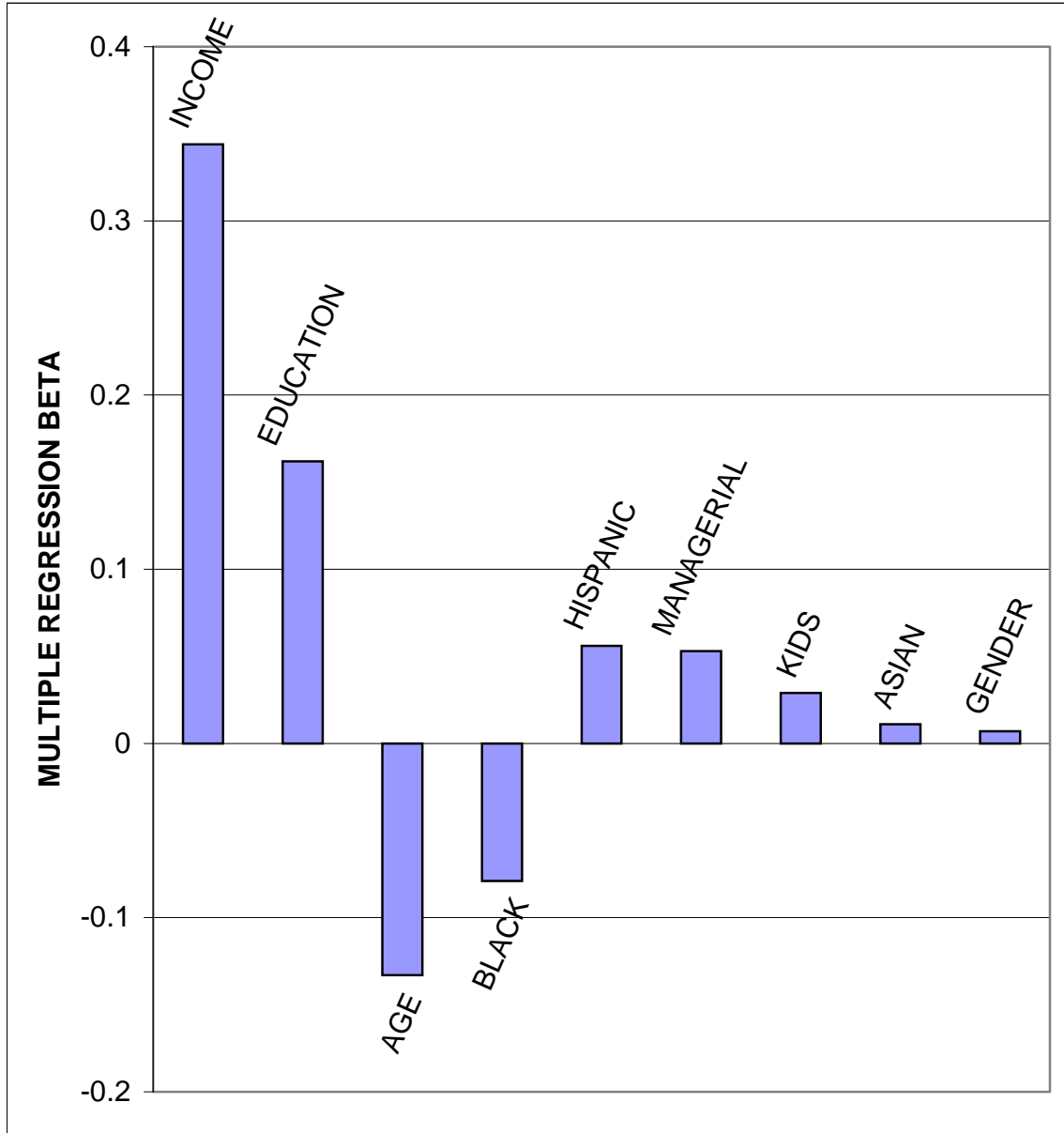




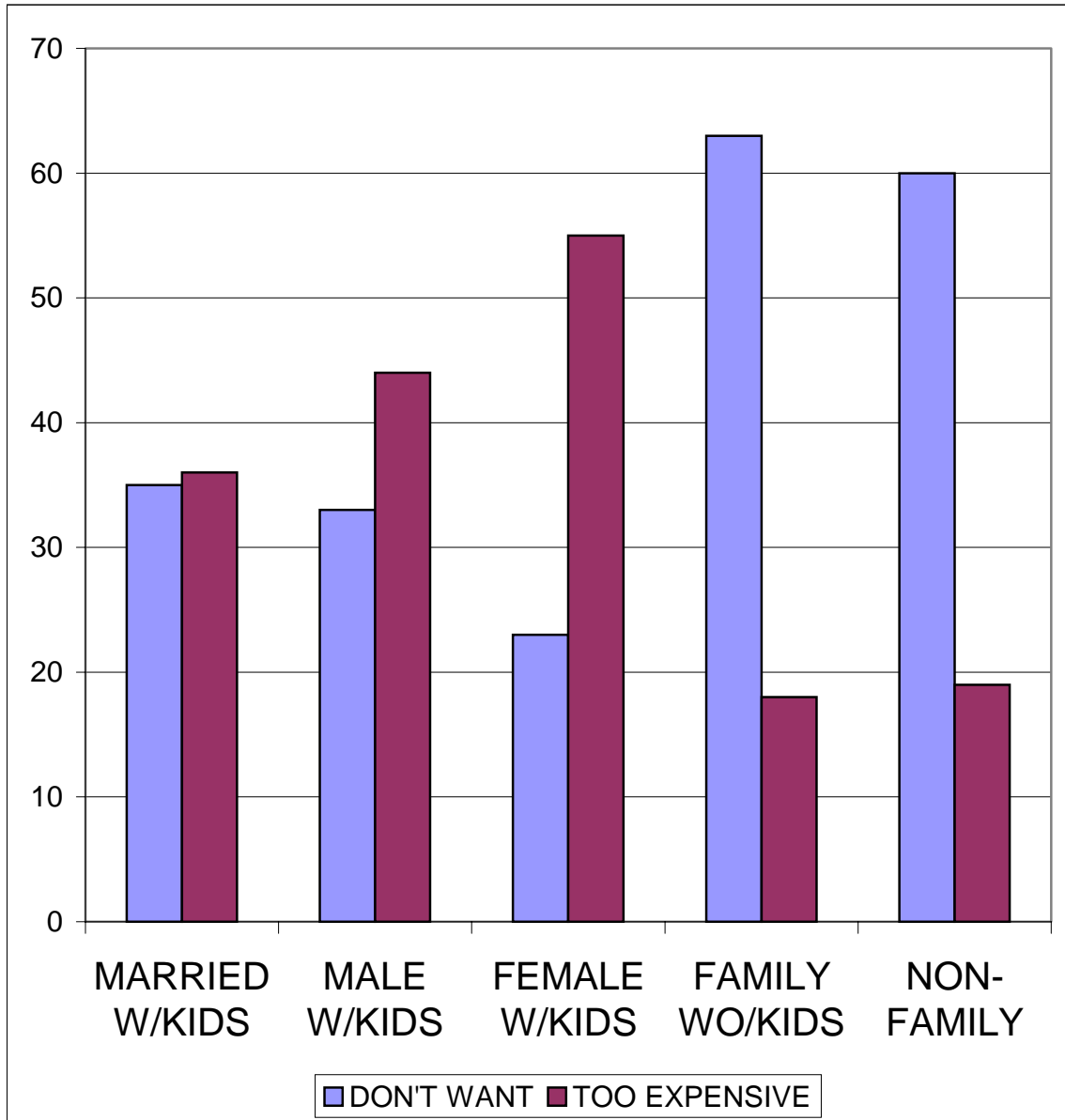
**EXHIBIT 9: INCOME, RACE AND INTERNET AT HOME FOR HOUSEHOLDS**



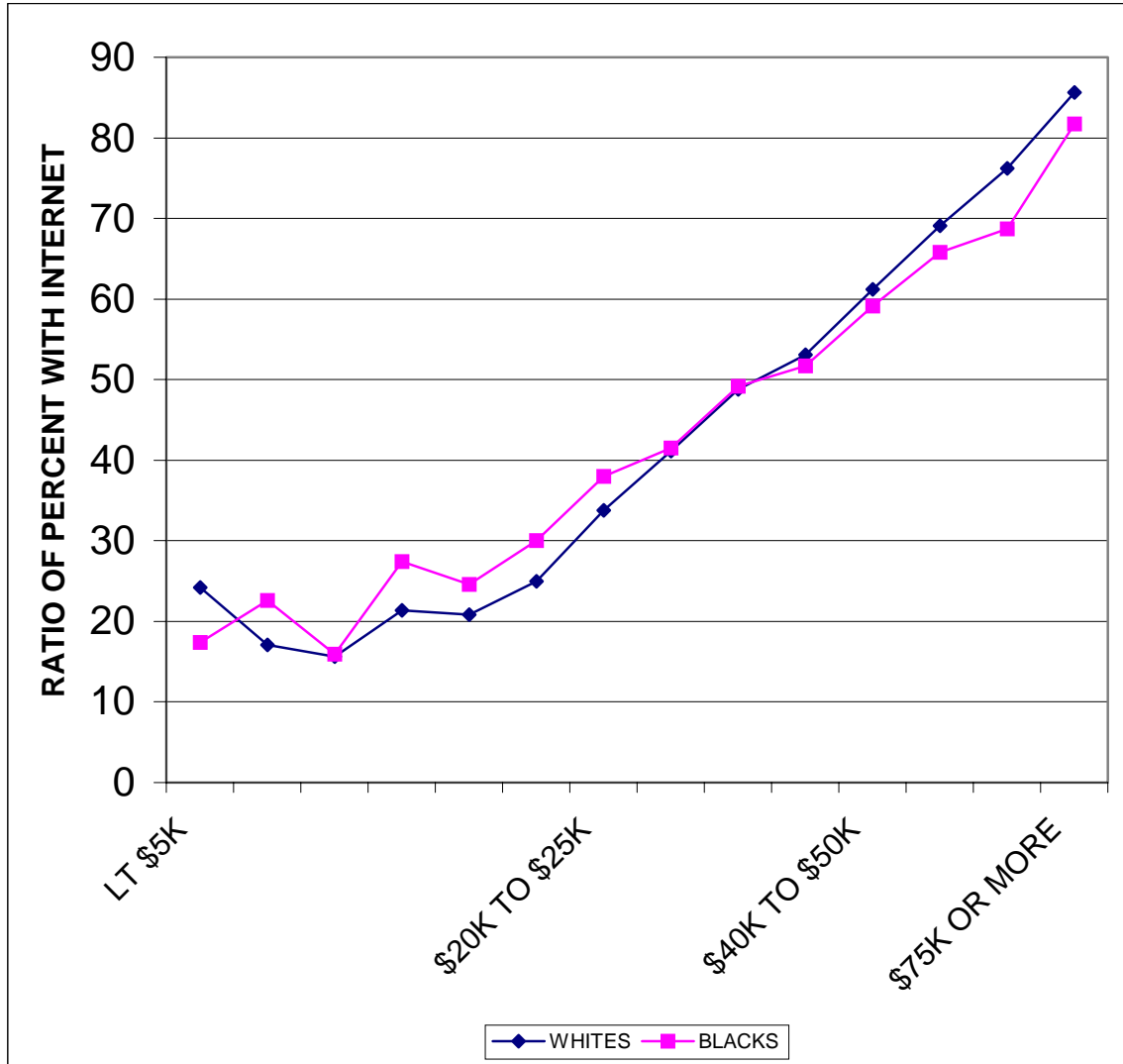
**EXHIBIT 10: DEMOGRAPHIC FACTORS EXPLAINING THE PRESENCE OF ACCESS TO THE INTERNET IN THE HOME**



**EXHIBIT 11: FEMALE HEADS OF HOUSEHOLDS DESIRE ACCESS TO THE INTERNET AT HOME, BUT CANNOT AFFORD IT**



**EXHIBIT 12: CONTROLLING FOR INCOME, THERE IS LITTLE DIFFERENCE IN INTERNET AT HOME BETWEEN BLACKS AND WHITES**



**EXHIBIT 13: FEMALE HEADED HOUSEHOLDS ARE A PARTICULARLY LOW INCOME SEGMENT OF SOCIETY, WHICH ACCOUNTS FOR THE LACK OF ACCESS TO THE INTERNET AT HOME**

