

Technology Usage and Small Business Outcomes Among Hispanic Entrepreneurs

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Introduction and Background

Recent studies from the Pew Hispanic Center have found that Hispanics as a population tend to lag behind the nation as a whole with respect to using information technology.

Do such differences exist among entrepreneurs?

Aside from arguable efficiency benefits, other technological advances include the utilization of on-line resources for employee recruiting, advertising to prospective customers, and increasing supplier networks.

The understanding of Hispanic entrepreneurs' technological engagement and its effect on their business outcomes has become of national importance.

Hispanics in the U.S. represented one out of every six people in the U.S. in 2010, up from one out of eight a decade earlier.

To the extent that Hispanics have a comparative advantage in offering goods and services to their fellow ethnics, these population changes suggest expanding business opportunities for Hispanic entrepreneurs.

Indeed, along with their population growth has come a sharp increase in the number of Hispanic business owners in recent years.

The most recent Survey of Business Owners shows that the number of Hispanic-owned businesses increased by **43.7%**, from 1.6 million to 2.3 million firms, between 2002 and 2007—more than twice the national business-growth rate of 18.0%.

The share of Hispanics among the self-employed has also been increasing due to the growing presence of Hispanics PLUS rising self-employment rates within the Hispanic population.

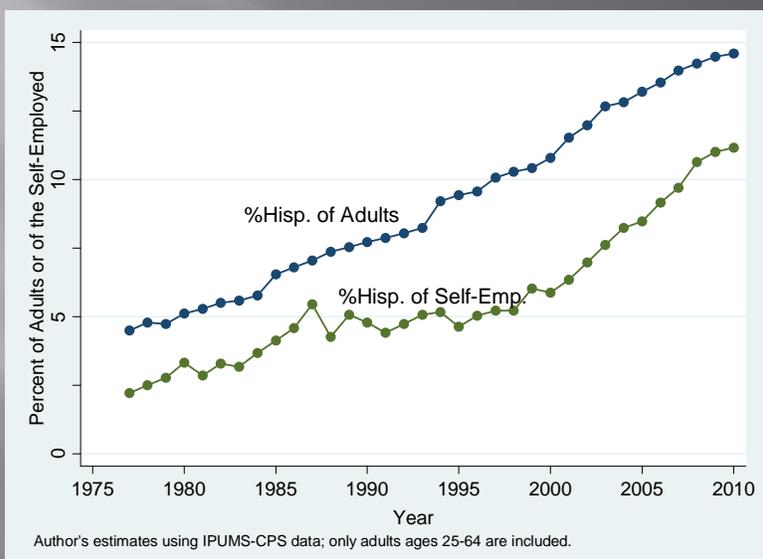


Figure 1: Percent of Hispanics among the Self-Employed

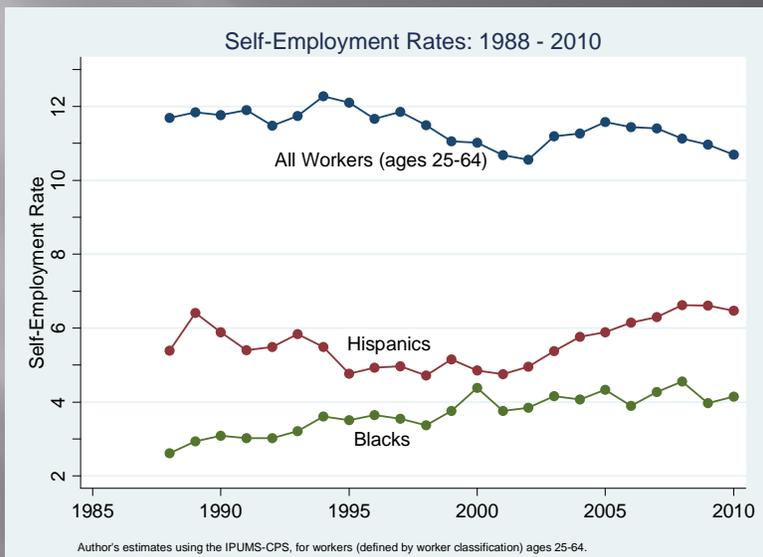


Figure 2: Hispanic Self-Employment Rates, Adults 25-64

Overview of Results

In this study, we find that a digital divide existed between Hispanic-owned small firms versus the national average in the late 1990s.

Yet, this divide had vanished by the mid-2000s.

Moreover, while the relationship between being digitally connected and small-business success measures was similar between Hispanic entrepreneurs and other small enterprises in the late 1990s, a seeming advantage emerged for Hispanics five years later.

In the mid-2000s, being technologically engaged had a significantly stronger relationship for Hispanic-owned small firms than other small businesses with respect to sales (particularly among small firms in the lower part of the sales distribution) as well as having profits exceeding certain benchmarks.

As such, programs designed to enhance Hispanic entrepreneurs' utilize technology could have implications with respect to small business outcomes affecting the nation overall.

Data and Sample Characteristics

We employ data from the 1998 and 2003 Surveys of Small Business Finances (SSBF).

Conducted by the Board of Governors of the Federal Reserve System, these surveys took place between 1999-2000 and 2004-2005.

These data include nationally representative samples of for-profit, non-financial, non-farm, and non-subsidiary business enterprises in the U.S. that had fewer than 500 employees at the end of 1998 and 2003.

The SSBF contain a host of information on small business characteristics, including the owners' socioeconomic/ demographic traits, firms' balance sheets, and technology usage.

A potential drawback is the relatively small sample size: $N = 3,561$ (rep. ~ 5.3 million) in 1998, and 4,181 (rep. ~ 6.3 million) in 2003.

We identify Hispanic-owned small businesses as those in which 50% or more of the primary owners were Hispanic. [$N = 264$ (rep. $\sim 302,000$) in 1998, and 170 (rep. $\sim 300,000$) in 2003].

Table 1: Technology Usage by Small Businesses

Characteristic	Hispanic	Black	Asian	Other
<i>1998 SSBF (Surveyed in 1999-2000)</i>				
Digitally connected	51.72%***	49.17%***	48.22%***	61.52%
Uses computer for business purposes	70.86%**	63.20%***	66.82%***	77.69%
<i>2003 SSBF (Surveyed in 2004-2005)</i>				
Digitally connected	75.37%	75.19%	74.49%	80.15%
Uses computer for business purposes	85.23%	76.93%**	83.37%	86.30%

***, **, * Technology usage is statistically different from "Other Firms" (non-HBA firms) at the one, five, or ten percent level.

Table 2: Average Business Success Outcomes Measures of Small Businesses

Characteristic	1998 SSBF		2003 SSBF	
	Digitally Connected	Not Connected	Digitally Connected	Not Connected
<i>Entire Sample</i>				
<i>Ln</i> annual sales (last fiscal year)	\$12.338 (1.919)	\$11.341 (1.761)	\$12.311 (1.942)	\$11.392 (1.751)
Employer firm	77.3%	66.3%	75.0%	66.5%
Profits \$10,000+	65.6%	61.2%	60.4%	52.7%
Positive profits	78.1%	81.4%	75.4%	74.2%
<i>Hispanic-Owned Firms</i>				
<i>Ln</i> annual sales (last fiscal year)	\$11.948 (1.678)	\$11.097 (1.801)	\$12.209 (1.707)	\$10.667 (2.205)
Employer firm	75.7%	70.1%	80.2%	69.2%
Profits \$10,000+	67.4%	57.3%	62.1%	32.3%
Positive profits	83.1%	76.2%	77.2%	60.6%

Table 3: Selected Mean Characteristics of Small Businesses

Characteristic	1998 SSBF		2003 SSBF	
	Digitally Connected	Not Connected	Digitally Connected	Not Connected
<i>Entire Sample</i>				
College graduate	59.8%	31.5%	51.8%	26.7%
Managerial experience	17.468	19.231	18.921	20.834
Age of firm	12.404	14.740	13.688	16.647
Sole proprietor	40.6%	62.2%	37.4%	63.1%
Outside MSA	16.5%	25.5%	19.1%	26.5%
<i>Hispanic-Owned Firms</i>				
College graduate	57.2%	19.2%	43.8%	12.4%
Managerial experience	14.954	16.581	14.816	19.684
Age of firm	10.303	11.693	9.462	16.402
Sole proprietorship	47.3%	59.4%	38.5%	67.6%
Outside MSA	5.2%	10.2%	9.6%	10.0%

Empirical Methodology and Results

To analyze the relationship between being digitally connected and business outcomes, we first estimate:

$$(1) \text{ Outcome} = f(\text{Connected}, \text{Race/Ethnicity}, \text{Connected} \times \text{Race/Ethnicity}, X).$$

We then use quantile regression to further analyze the relationship between sales and being connected.

Finally, we employ the Juhn, Murphy, and Pierce technique to decompose the change in the sales differential between Hispanic and non-HBA firms.

Table 4A: Selected Regression Results for Economic Outcomes of Small Businesses

Characteristic	Ln Sales		Employer Firm	
	1999-2000	2004-2005	1999-2000	2004-2005
Digitally connected	0.735*** (0.073)	0.622*** (0.085)	0.313*** (0.068)	0.272*** (0.079)
Hispanic x digitally connected	-0.073 (0.223)	0.881** (0.379)	-0.126 (0.197)	0.217 (0.301)
Black x digitally connected	-0.143 (0.220)	-0.419 (0.444)	-0.142 (0.199)	-0.405 (0.355)
Asian x digitally connected	-0.201 (0.247)	-0.479 (0.298)	-0.577** (0.237)	-0.422 (0.367)
Hispanic	-0.158 (0.177)	-0.702** (0.353)	0.184 (0.148)	0.123 (0.254)
Black	-0.417*** (0.141)	-0.254 (0.344)	0.314** (0.137)	0.491 (0.310)
Asian	0.390** (0.172)	0.815*** (0.259)	0.526*** (0.176)	0.547* (0.331)

***, **, * Statistically significant at the one, five, or ten percent level.

Table 4B: Selected Regression Results for Economic Outcomes of Small Businesses

Characteristic	Positive Profits		Profits \$10,000+	
	1999-2000	2004-2005	1999-2000	2004-2005
Digitally connected	-0.037 (0.071)	0.063 (0.081)	0.161*** (0.062)	0.175*** (0.074)
Hispanic x digitally connected	0.322 (0.205)	0.609** (0.295)	0.130 (0.181)	0.731** (0.290)
Black x digitally connected	-0.172 (0.198)	-0.486 (0.342)	-0.095 (0.179)	-0.300 (0.327)
Asian x digitally connected	-0.398* (0.230)	-0.024 (0.344)	-0.103 (0.206)	-0.127 (0.315)
Hispanic	-0.126 (0.147)	-0.504** (0.253)	-0.065 (0.133)	-0.610** (0.254)
Black	-0.001 (0.144)	0.077 (0.294)	-0.105 (0.128)	-0.221 (0.279)
Asian	0.413** (0.179)	0.152 (0.310)	0.327** (0.152)	0.445 (0.279)

***, **, * Statistically significant at the one, five, or ten percent level.

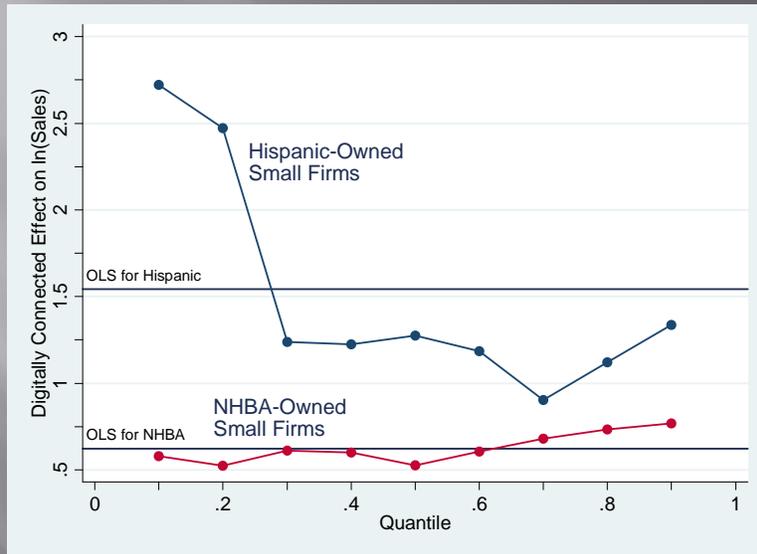


Figure 3: The Effect of Being Digitally Connected on the Sales of Hispanic- and Non-HBA-Owned Firms in the Mid-2000s

Table 5: Juhn-Murphy-Pierce Decomposition of Changes in the Hispanic/non-HBA Annual Sales Differential, by Digital Connection Status, between 1998 and 2003

Effects	Digitally Connected	Not Digitally Connected
$\Delta Sales_{1998} \equiv \ln(S)_{1998}^H - \ln(S)_{1998}^N$	-0.4467	-0.2797
$\Delta Sales_{2003} \equiv \ln(S)_{2003}^H - \ln(S)_{2003}^N$	-0.1335	-0.7509
$\Delta Sales_{2003} - \Delta Sales_{1998}$	0.3133	-0.4712
X-effect	-0.1065	0.0284
B-effect	-0.0060	0.0857
θ -effect	0.4339	-0.5976
σ -effect	-0.0076	0.0115

Summary and Concluding Remarks

Using the Surveys of Small Business Finances, we find that the digital divide experienced by Hispanic-owned small firms *vis-à-vis* non-HBA firms in the late 1990s had vanished by the mid-2000s.

Moreover, while the relationship between being digitally connected and small-business success measures was similar between Hispanic entrepreneurs and other small enterprises in the late 1990s, a seeming advantage emerged for Hispanics five years later.

In the mid-2000s, being technologically engaged had a significantly stronger relationship for Hispanic-owned small firms than other small businesses with respect to sales (particularly among small firms in the lower part of the sales distribution) as well as having profits exceeding certain benchmarks.

The JMP decomposition technique suggests that the relative improvement in sales made by connected Hispanics between the late 1990s and mid-2000s was not explained by shifts in, or returns to, their observable characteristics in the SSBF, but rather a set of unobserved characteristics.

Given the discontinuation of the SSBF, this data source regrettably cannot be used to examine whether the role of digital technology in Hispanic-owned small business outcomes continued to evolve during the course of the Great Recession.

As technological advancements will likely continue to surge, our results suggest that the rate at which Hispanic entrepreneurs (and other small firm owners) integrate such technology into routine business operations has real implications for their success.

Programs designed to help Hispanic entrepreneurs utilize new technology should therefore increase not only their computer literacy, but also enhance their potential performance with respect to a variety of business outcomes.

In light of the growing presence of Hispanics in the U.S.—not just in terms of the population but also in the small business sector—understanding factors that affect the success of Hispanic enterprises has become a topic of national interest, particularly during a time of weak labor markets.