

# **Latino Entrepreneurs and Technology Usage: Ethnic Identity, Resistance, Self-Efficacy**

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*Firm performance has been linked to information technology adoption. However, limited research exists related to minority entrepreneurs' technology usage due to inequalities of ownership, cultural ethnicity impact, and inconsistent comparative usage, specifically among Latino users.*

*This study investigates Latino and non-Latino entrepreneurs: 116 subjects with 61% Latinos; the relationships of ethnic identity, resistance to technology use, and self-efficacy; differences between business process and social media technologies; contexts of financial management and linguistic communication for business processes; business owner's self-efficacy and technology adoption. Latinos results: higher technology resistance, social technology usage; and, lower self-efficacy, use of linguistic communication technology context.*

## **INTRODUCTION**

Information technology (IT) adoption is critical to small and medium enterprise (SMEs) economic development, growth, and sustainability (Qureshi & York, 2008) as well as business performance, productivity, and competitiveness (Hunter, 2004; Jones & Kochtanek, 2004; Barba-Sanchez, Martinez-Ruiz, M., Jimenez-Zarco, A.I., 2007). In fact, according to Boston Consulting Group (2013), increased technology adoption by small business enterprises can boost the economy upwards of \$360 billion and generate more than two million jobs. Research suggests that effective technology usage within an organization is positively related to the business owner's attitude and willingness to adopt it (Parasaraman, 2000). McGowan & Durkin (2002) study identify the importance of technology in managing customer relationships, the ability to envision, value and manage its usage.

Latinos are one of the fastest growing minority groups in the USA with a higher likelihood to start businesses but experience lower business sustainability than non-Latinos (Sullivan, 2007). Minority businesses have been found to not utilize information technology at the same degree as other small businesses (Gavino & Ortiz-Walters, 2009; Allinson, Braidford, Grewer, Houston, Orange, Leigh, & Stone, 2004; Foley & Ram, 2002; Ram & Smallbone, 1999).

According to Livingston (2011), minority business owners are online less than their White counterparts. Yet other research finds no digital divide among ethnic groups; varying technology usage patterns for Latinos; and type of technology used. PEW Hispanic Research (Lopez et al., 2013) found that while Latinos use mobile and social networking technologies at similar rates to other groups, their ownership of desktop or laptop computers as well as accessing the internet lagged behind non-Latino groups.

With Latino venture start-ups increasing at record rates, their sustainability has been weak and many determinants have been identified for this threat (Thatcher & Perrew, 2002; Ndubisi, Jantan, & Richardson, 2001). One in ten Latinos are engaged in entrepreneurship, representing an estimated 3 million small business owners; and forecasts predict one third of the U.S. population being Latino by 2060 (US Census Bureau, 2013). Therefore, the mandate to understand the determinants of growth and sustainability for Latino owned small business is increasingly important. Ethnic identity, culture, and social impact have rarely been discussed in the technology adoption and acceptance literature.

The social identity theory research (Tajfel, 1978) reports that social and cultural groups, particularly those with collectivist characteristics, demonstrate a level of group membership awareness, sense of belonging and attachment, and a value of collective group esteem that can impact organizations. Foley and Ram (2002) suggest that the business owner's cultural lens impacts their capacity for technology adoption with significant differences existing between ethnic groups. In contrast to the density of literature available on information technology adoption and its impact on established firm productivity, less is known about the impact on minority entrepreneurs, particularly Latino entrepreneurs.

Our literature review indicates that the differences in minority entrepreneurship technology usage have cultural, socialization, and language communication implications (Clayman, Manganello, Viswanath, Hesse, & Arora, 2010). Therefore, our study examines minority entrepreneurs, specifically Latinos, and the relationship of ethnic identity, resistance to use, and self-efficacy. We distinguish between type of technology as business process and social media; and further explore business process *context* as financial management and linguistic communication. We explore the business owner's self-efficacy and willingness to adopt or resist technology and compare results for Latino vs. non-Latino entrepreneurs, and examines the application of the Technology Acceptance Model (Davis, 1989; Ndubisi, Gupta, & Ndubisi, 2005).

## TECHNOLOGY ADOPTION LITERATURE REVIEW

From a resource based analysis perspective, information technology capacity is positively correlated with firm performance measures (Bharadwaj, 2000); and management of technology is reported as critical to sustainability (Matta, Fuerst, & Barney, 1995). The growth of technology and its role in corporate effectiveness and productivity has generated a rigorous research stream by exploring the determinants and models that influence user acceptance and adoption of technology. The widely accepted and seminal Technology Acceptance Model (TAM) theorizes that *perceived usefulness* and *perceived ease of use* influence the attitude and intention to use technology (Davis, 1989). This usage intention predicts the user's actual utilization and acceptance of technology (Ndubisi, Jantan & Richardson, 2001; Fishbein & Ajzen, 1975; Mathieson, 1991). The two constructs in the TAM model positively correlated to the technology intention or usage are:

**2a. Perceived usefulness:** "The degree to which a person believes that using a particular system would enhance his or her productivity" (Davis, 1989, p320) and include positive perceptions that usage will increase productivity, job performance, and job effectiveness (Davis et al., 1989; Ndubisi et al, 2001).

**2b. Perceived ease of use:** This represents the degree to which a person believes that using a particular system would be free of effort, clear, easy to do what is required with minimal mental effort (Kitchell, 1997).

While the model has been validated in predicting technology usage, there is a gap in the literature in exploring these variables among entrepreneurial behavior (Ndubisi & Richardson, 2002; Ndubisi, Jantan, & Richardson, 2001) of minority entrepreneurs.

### **Technology Adoption: Minority Entrepreneurs**

Technology adoption is even more essential for SMEs and minority entrepreneurs (Qureshi & York, 2008; Matthews, 2007; Ballatine, Levy, & Powell, 1998; Harrison, Mykytyn, & Riemenschneider, 1997; Street & Meister, 2004). Ethnic identification, defined as one's sense of belonging or membership in an ethnic group with shared perceptions, attitudes, behavior, self-identification, and other background indicators, differs among groups and is known to influence the level of information technology adoption (Changanti & Greene, 2002; Menzies, Filion, Brenner, & Elgie, 2007). Research indicates that the small business owner's ethnic identity, social characteristics, individual learning styles, as well as behavior and attitudes toward technology are positively associated with information technology adoption (Qureshi & York, 2008). The influence of group and cultural relationships has had limited empirical assessment (Venkatesh et al., 2003), particularly related to minority entrepreneurs. This study examines ethnic minority, specific Latino entrepreneurs in relation technology adoption.

### **Latino Entrepreneurs**

#### *Characteristics.*

Latino entrepreneurs are perceived as having: more proclivity toward family orientation in the business environment; inherent sense of community connection; tendencies to build businesses with family embeddedness, strong ties, and collectivist cultural norms (Ortiz-Walters, Gavino, & Williams, 2015; Smith-Hunter, 2006; Ram, 1997; Marin & Marin, 1991; Qureshi & York, 2008). This connection to formal ties and local neighborhoods may serve as a barrier to the Latino entrepreneur, particularly when access to resources and information outside of the community are required for sustainability (Ortiz-Walters et al., 2015; Gavino & Ortiz-Walters, 2011). The family embeddedness literature further suggests how this perspective may adversely influence venture operations and resource mobilization (Aldrich & Cliff, 2003). In the Latino culture, pride (Garcia, 2000; Morales, 2002), harmonious relationships (Benet-Martinez & John, 1998), and high power distance with respect and loyalty for superiors (Bradford, Meyers, & Kane, 1999) are primary value systems which further influence an owner's approach to the business venture. Technology represents a major vehicle to reach resource mobilization and resistance to technology adoption has direct implications on business sustainability.

#### *Social media*

Social media is gaining strength and traction as a key component of the business owner's advertising mix (Mincite, 2012; Geho & Dangelo, 2012) and requires businesses to embrace and utilize social technology. One study found that Latinos ages 18 to 29 were the most likely to use social media (PEW Research, 2013) while another reported that Latinos as a whole exceed non-Latinos in use of social media (i.e., Facebook and Twitter) by 68% and 52% respectively (PEW Research 2012).

## **PREDICTORS OF TECHNOLOGY USAGE**

The determinants of a positive computer experience and adoption include self-efficacy, computer anxiety or resistance, perceived ease of use and perceived usefulness (Igbaria, & Ilvari, 1995; Davis, 1989; Yi, & Hwang, 2003; Thatcher & Perrewe, 2002). The cultural ethnicity influence on the utilization of information technology by SMEs has been reported to differ from other small businesses (Foley & Ram, 2002). Ram and Smallbone (1999) findings show that while 82% of White owned microenterprises used computers for a business computing purpose only 54% of minority small business did as well. This research suggests that proclivities for personal contact as well as values and beliefs associated with culture can influence information technology acceptance and adoption (Beckinsale Ram, Theodorakopoulos, 2011; Cheechi, Sevcik, Loch, & Straub, 2002). Yet, Latino entrepreneur research in this area has been fragmented (Canedo, Stone, Black, & Lukaszewski, 2014). Therefore, this study explores the impact of determinants of “self-efficacy” and “computer resistance” on technology usage for Latino and non-Latino entrepreneurs.

### **Self- Efficacy**

Self-efficacy is one’s belief that he/she has the capability to perform a particular action or “to mobilize the motivation, cognitive resources, and courses of action needed to meet given situation demands” (Wood and Bandura, 1989, p408). Self-efficacy has been positively correlated with technology acceptance and adoption (Igbaria & Livari, 1995; Burkhardt & Brass, 1990; Gist, Schwoerer, & Rosen, 1989; Hill, Smith, & Mann, 1987). Based on social learning theory (Bandura, 1977; 1986) an entrepreneur’s self- efficacy is negatively affected by high levels of emotional anxiety. We believe additional research is needed to better understand these relationships among minority entrepreneurs’ behavior and acceptance. Emotions play a role in technology adoption as they impact self-efficacy or one’s belief in their ability to perform. For example, negative emotions or affect, or lack of confidence and anxiety are antecedents to self-efficacy and impact one’s behavior adversely toward technology use (Venkatesh & Davis, 2000; Venkatesh, et al., 2003).

Research revealed that Latinos who were less comfortable socially outside of their own cultural community would interact less frequently with the internet and technology, specifically with people that they were not familiar with (PEW Research, 2012). The collectivist Latino culture places stronger value for face to face interaction (Shinnar & Young, 2008; Tajfel, 1978; Ortiz-Walters et al., 2015) which can suggest lack of confidence in an ability to engage in business relationships or processes requiring more technology driven business interaction.

### **Computer Resistance**

While research on information systems and adoption is extensive, empirical evidence on the unique challenges facing minority entrepreneurs and technology adoption rates represents an opportunity for research. Beckinsale and colleagues (2010) confirm that while traditional SMEs face challenges of size, strategy and business age, minority entrepreneurs face additional obstacles of cultural influences, limiting ethnic networks, lack of support and trust that can cultivate an environment of resistance. Hirschheim and Newman (1988) identified causes of resistance relevant to SMEs including uncertainty, redistribution of resources, poor technical quality, cognitive styles of the technology user not matching that of the technical system, as well as lack of training and education.

Minority entrepreneurs may not have the necessary information and resources available in their networks. Studies in ethnic differences reveal that teaching styles must be adopted to be compatible with the cultural perspective and distinctive learning styles of the ethnic stakeholder being trained. Felder and Solomon (2000) explored the notion that preferred learning style differences among ethnic minorities may influence their differing approaches to technology adoption. For example: African American learners are reflective; Caucasian learners are more active; and Latinos are more intuitive in their approaches which suggests that more quantitative and linear business processes may be met with resistance.

Technology acceptance and adoption have been associated with several factors including the fear of computers; lack of: confidence, value for technology, motivation and willingness to adopt; resistance to learning new technology; and organizational dysfunction associated with technology sabotage and system non-use after a considerable investment (Hirschheim & Newman, 1988). Computer resistance may place a business owner at a competitive disadvantage (Lacho & Marinello, 2010). Technology acceptance and adoption plays a critical role in the business lifecycle of a minority entrepreneur's venture suggesting that strategies for overcoming resistance are important for business sustainability.

## **LATINO VERSUS NON-LATINO USAGE**

Technology adoption research related to exploring the influence of ethnic identity, culture and social aspects on the usage behaviors, particularly among the fastest growing Latino population is an opportunity ripe for research. The influence of collectivistic perspectives, social embeddedness, and ethnic identities can influence the minority entrepreneurs' business decisions and approaches to operations. Research does identify that Latino-owned enterprises tend to focus more on ethnic-enclaves, collectivist behaviors influencing strong ties with business employees, and socially embedded business structures (Ortiz-Walters et al., 2015; Shinnar & Young, 2008). This narrowed sphere of influence may limit their access to information and resources; thus, positioning technology adoption and expanded ties as even more critical to business sustainability.

With fewer years of business experience than non-Latinos (Shim & Eastlick, 1998) and lower educational levels (Krogstad, 2016), Latino entrepreneurs often experience limited management skills, business knowledge, and ownership experience. Personal limitations in business skills deemed important for effective day to day technology operations may further impact their self- efficacy, acceptance, and frequency of usage of technology. For example, the Latino business owner's competency with technologies utilized for two business processes will influence their performance including: a) financial management software such as spreadsheets, on-line banking, Quickbooks; or, b) software requiring competency in English language or linguistic communications such as word processing and email.

**Hypothesis 1: Self-efficacy and resistance predict technology usage.**

**Hypothesis 2: Latino entrepreneurs report lower self-efficacy than non-Latino entrepreneurs.**

**Hypothesis 3: Latino entrepreneurs will have higher resistance to technology than non-Latino entrepreneurs.**

## **BUSINESS PROCESS TECHNOLOGY**

### *Financial Management*

Information technology adoption by the minority entrepreneur and SMEs offers a level of business functionality that often drives innovation, seeds growth and economic development. Bitler (2002) identified four common uses of computer technology in small business including administration, bookkeeping, email, and inventory management. In our study, we operationalize technology functions as *business process technology: finance management* which requires more quantitative competencies used by small business owners such as, spreadsheet software, Quickbooks, and online banking.

### *Linguistic Communication*

Latinos in the United States come from a diverse cultural and ethnic backgrounds with varying degrees of linguistic proficiency. In this study, technology requiring linguistic competency is referred to as *business process technology: linguistic communication* and represents written business communication such as word processing and email.

Research empirically supports cultural impact on the competencies required for business process technology success, particularly if there is lack of confidence or competency with the English language (Clayman et al., 2010). Both communication skills and self-esteem, for example, correlate positively with technology usage and influence how social media is engaged (PEW, 2012).

Latinos may not access and use information technology in the same way as non-Latinos due to language, culture and media use differences. That said, it is also important to dispel the myth of the homogeneity of U.S. born versus foreign born Latinos (Jimenez, 2000). Less than one third of Spanish dominant speaking Latinos in the U.S. use the internet, even those who reported speaking English well at home (Lopez et al., 2013). Patten and Squires (2009) report that Latinos with Spanish language dominance found it difficult to search for information via the internet when compared to English speaking Latinos or non-Latinos. Despite the importance of closing the digital divide and the increase in internet usage and mobile technology, English speaking Latinos were not more likely to use the internet than non-Latinos.

**Hypothesis 4: Latino entrepreneurs will use financial management oriented software less than non-Latinos.**

**Hypothesis 5: Latino entrepreneurs will use linguistic communication oriented software less than non-Latino entrepreneurs.**

**Hypothesis 6: Latino entrepreneurs will use linguistic communication oriented software less than financial management oriented software.**

## **SOCIAL MEDIA TECHNOLOGY**

Social technology has become an essential resource for promoting a business both for internal and external communications with vendors and building customers. The variety of social media options continue to grow as the new normal, and research finds that the adoption and selection of social media options by the business owner (Facebook, Twitter, LinkedIn, etc..) depends on several determinants, including but not limited to: the user's comfort with technology; purpose for the communication; engine access; social media budget; use of the platform as a marketing strategy or socialization tool; and social network receptivity (Fischer & Reuber, 2011; Geho & Dangelo, 2012; Stelzner, 2011). While social technology requires on-line communication, the symbolic language of social media can make it easier for a non-fluent English speaker to still remain conversant and active in the social media platform.

In developing communities, small business owners rely on informal social networks and strong ties for information (Duncombe & Heeks, 2003; Ortiz-Walters, et al., 2015); and Latino owned small businesses are likely to be in culturally dominant neighborhoods with access to informal networks (Ortiz-Walters, et al., 2015). Due to the collectivist culture of the Latino owner, interpersonal and information exchanges may have a higher preference for formats that support personal face to face exchange versus virtual exchanges. This may impact the fluency of social media usage for these business owners with the exception of younger entrepreneurs (PEW Research, 2013).

**Hypothesis 7: Latino entrepreneurs will have lower social media technology usage than non-Latino entrepreneurs.**

## METHODOLOGY

### Sample and Procedure

The data was collected from small business owners who participated in a series of capacity building workshops in two ethnically diverse communities in a large Midwest metropolitan city. The data was compiled from responses to surveys and designed to investigate business owners' needs, behaviors, and attitudes across a variety of business operational topics including technology adoption. The surveys and workshop content were available in English and Spanish; and surveys were accessible both on-line and hard copy.

Of the business owners who reported demographic information, 61% were Latino, 18% African American, 9% White; 58% female; 21.5% younger than 34; 25% between 35 and 44 years of age; 26% between 45 and 54; and 15% older than 55; 59% reported owning all of the business and 18% owned part; 78% reported employing less than five employees; 7% employed between 6 and 10; 3% between 11 and 26 workers. Thirty three percent had been in business less than 1 year; while 29% between 1 and 4; 17% between 5 and 10; and 15% over 10. Sixty six percent did not have a computer and 56% planned to purchase one; 4% indicated they had a graduate degree; 10% a 4-year college degree; 18% a 2-year college degree; 18% some professional training; 21% a high school diploma; and 11% no degree. This is reflective of a recent report by PEW (Krogstand, 2014) related to education levels of Latinos, as it found that in 2014 only 15% of Latinos ages 25 to 29 had a bachelor's degree or higher compared to Whites (41%); African-Americans (22%) and Asian (63%).

### Measures

For the purpose of examining technology usage among minority entrepreneurs, this study measures perceived usefulness, frequency of use, self-efficacy, and resistance while comparing differences between Latino and non-Latino entrepreneurs. Davis' (1989) Technology Acceptance Model research included the exploration of a series of external variables evaluated as antecedents to perceived usefulness and perceived ease of use. In our research, we further explore self-efficacy and computer resistance as well as the contextual function of technology used for a variety of business processes: financial management, linguistic communication, and social media. Our examination of *actual* usage versus often used *intention* to use further contributes to understanding these relationships.

Established measures were used for measuring self-efficacy and resistance to technology. This study specifically extracted from the extensive research literature and empirically tested scales available on computer self-efficacy. Computer self-efficacy involves the beliefs and behaviors about one's capabilities to use computers and their subsequent adoption behavior (Igarria & Iivari, 1995). Items used are from well tested scales including Computer Self-efficacy scale (CSE: Murphy, Coover, & Owen, 1989); Computer Confidence Subset and Computer Attitude scale (CCCA: Loyd & Gressard, 1984). Self-efficacy and resistance to technology were measured on a 7-point Likert scale ranging from strongly disagree (1) to strongly agree (7). Sample item include: "I feel comfortable about my ability to work with computer technologies"; and "I feel at ease learning about computer technologies".

Our operationalization of resistance is based on variables reflecting situation-specific anxiety, uneasiness, apprehensiveness, or phobic attitudes toward computers that could serve as an obstacle to adoption. We utilized items from the Computer Anxiety Scale (CAS: Marcoulides, 1989) and Computer Anxiety Rating Scale (CAR:Heinssen et al., 1987). Sample items include: "I don't have any use for computer technologies on a day-to-day basis"; and "I don't see how I can use computer technologies to learn new skills."

#### *Perceived usefulness: usage frequency.*

Frequency of system usage has been determined to represent the perceived usefulness (Ndubisi, Jantan, & Richardson, 2001) as defined by the Technology Acceptance Model (Davis, 1989). Therefore, we measured technology usage frequency by asking "how often he/she uses different software such as

word processing, email, spreadsheet software". A 5-point Likert scale was provided with possible responses on frequency of usage ranging from never (1) to daily usage (5).

#### *Business process technology*

Technology based applications were combined into two larger groups based on business function as well as the nature of the skill and competency required by the business owner. A 5-point Likert scale was provided with possible responses on frequency of usage ranged from never (1) to daily usage (5). The mean of the responses was used to generate a continuous variable. *Financial management* is a subset of business process technology and refers to financial management technology including spreadsheet software such as Lotus, Excel, Appleworks, etc., and Quickbooks used for business finances and payroll maintenance/benefits, and online banking. Linguistic communication also a subset of business process technology refers to linguistic written communication management systems including word processing software such as WordPerfect, Word, Appleworks, etc., and electronic email.

#### *Social technology usage.*

This study includes the categorized list of social media outlets such as Facebook and Twitter and measures frequency of usage. A 5-point Likert scale was provided with possible responses on frequency of usage ranging from never (1) to daily usage (5). For Hypotheses 1 through 3, social technology and business process technology were combined. To test H1, technology usage was regressed on self-efficacy and resistance to technology. A test for differences between means was used to test H2 – H7. A paired sample test was used to test H6 as it compared the difference between business process technology: financial management and business process technology: linguistic communication for Latino entrepreneurs.

All tests were conducted as one-sided t-tests. The tests for H2, H4, H5, and H6 were performed as lower-tailed tests while the tests for H3 and H7 were upper-tailed tests. Pairwise deletion was used for all tests. For each test, all available data for the particular test was used. This resulted in a slight variation in sample sizes on a test-by-test basis.

## **RESULTS**

Table 1 provides the correlations, descriptive statistics, and reliability for overall technology usage, self-efficacy, and resistance to technology. Table 2 provides the results for overall predictability of technology usage as a function of self-efficacy and resistance to technology ( $F_{(2, 86)} = 13.786, p < 0.01$ ). In a test of the individual coefficients, self-efficacy was significant ( $t = 2.581, p < 0.01$ ). However, resistance was not significant. Thus the data does not support that both self-efficacy and resistance to technology are predictors of technology usage. This result is likely a function of the significant correlation between self-efficacy and resistance to technology. The results of the model are reported in Table 2.

The data supported H2 and H3 which hypothesized that Latino entrepreneurs ( $M=4.96$ ) would have lower self-efficacy ( $t(81) = -2.609, p < 0.01$ ) in technology and a higher resistance ( $M=2.44$ ) to technology ( $t(89) = 2.533, p < 0.01$ ), respectively, than non-Latino entrepreneurs ( $M=5.67; M=1.90$ ). The results are provided in Table 3.

Hypothesis 4 predicted that Latino entrepreneurs would use business process technology: finance management less than non-Latino entrepreneurs. Hypothesis 4 was not supported by the findings. However, Latino entrepreneurs ( $M=3.65$ ) were found to use linguistic communication technology ( $t(80) = -2.542, p < .01$ ) less than non-Latinos ( $M=4.31$ ). Thus, supporting Hypothesis 5 as shown in Table 4. Additionally, Hypothesis 6 predicted Latino entrepreneurs would use business process technology: linguistic communication software [ $M=3.65$ ] less than financial management software [ $2.28$ ].

In fact, the results suggest the opposite - use of linguistic communication software is greater than financial management software by Latino entrepreneurs ( $t(53) = 8.945, p < 0.00$ ). Finally, we predicted that Latino entrepreneurs would use social technology less than non-Latino entrepreneurs in Hypothesis 7. As in Hypotheses 6, the findings do not support Hypothesis 7, and the results suggest the opposite is true - Latino entrepreneurs ( $M=3.91$ ) actually use social technology ( $t(86) = 1.935, p < .05$ ) more than non-Latino entrepreneurs.

## DISCUSSION AND LIMITATIONS

In summary, self-efficacy was found to be a predictor of technology usage, while resistance was not. The latter finding contradicts findings where low resistance or anxiety predicts high probability of technology adoption (Heinssen, Glass, & Knight, 1987; Hirschheim & Newman, 1988). The initial explanation may be explained by Moore & Benbasat (1991) research which proposes that a user's decision to use technology is affected by their perception of their own ability to use (self-efficacy) as well as how positively they see the results of using the technology. As predicted self-efficacy of Latino entrepreneurs is lower than for non-Latino entrepreneurs, and there was a higher resistance to technology than by non-Latino entrepreneurs. According to Moore & Benbasat (1991), if the entrepreneur also perceives the usage of technology in their business as having low value, then the entrepreneur's resistance to technology may not be the driving factor to technology adoption and the impact of both self-efficacy and value of use may have significance.

In terms of specific business process technology usage, Latino entrepreneurs seem to use linguistic communication software less and social technology more than non-Latino entrepreneurs. Interestingly it appears that no difference exists in the use of financial management software between Latino and non-Latino entrepreneurs. These two findings were actually the opposite of what we predicted are quite interesting in the sense that there may be both cultural and language proficiency implications associated with this findings.

Our findings provide insight into the relationship of self-efficacy, resistance, and cultural ethnicity for Latino entrepreneurs versus non-Latino entrepreneurs on technology usage and the impact of the function and context of the technology on user adoption. Both Hypotheses 1 and 2 were supported affirming that self-efficacy both positively predicts technology usage and that Latinos have lower self-efficacy in technology usage than non-Latinos. Results complement prior research suggesting that SME's, particularly minority entrepreneurs often face obstacles to technology usage including lack of education, experience, investment capacity, and social networks that contribute to lower sustainability levels than non-minority entrepreneurs (Ballantine et al., 1998; Barba-Sanchez et al., 2007).

It is important to point out that self-efficacy was found to predict technology usage and resistance to change was not, therefore signifying the importance of self-efficacy over resistance. It is possible that in today's environment of technology and the use of social media for business exposure, that resistance to technology is no longer as salient, as small business owners may recognize that adopting technology is no longer an option and critical to their success.

Not surprisingly, Latino entrepreneurs have greater resistance to technology usage than non-Latinos. However, we should note that the resistance level is low at 2.44 out of 7.00 again suggest that resistance to technology may not be as significant of a factor as self-efficacy.

Hypothesis 5 was supported as Latino entrepreneurs used technology requiring linguistic communication for word processing and electronic email applications less than non-Latino entrepreneurs. These findings suggest that Latino entrepreneurs may be less inclined to use technology that requires writing and English proficiency skills.

Implications of this finding suggest further research on the impact of US born versus foreign born Latino entrepreneurs as well as whether business owner training should include strengthening basic written and oral communication skills to expand options and effectiveness in online communication. Contrary to our prediction, Latino entrepreneurs were found to use social technology such as Facebook and Twitter *more* than non-Latino entrepreneurs.

It is possible that Latino entrepreneurs, are impacted by their collectivist ethnic values where commitments to strong social ties may impact the opportunity cost of using social technology versus technology for business purposes.

On the other hand, Latino business entrepreneurs use linguistic communication technology more than financial management technology. Interestingly, Latino entrepreneurs use of business process technology for financial management purposes is no different than non-Latinos suggesting equity in the self-efficacy with financial management software as suggested by Hypothesis 4. What is especially troubling about the use of financial management technology is that it is quite low for both Latino and non-Latinos, which can be quite detrimental to small business success, and the importance of financial management skills is often cited as a problem for SMEs (Beckinsale et al., 2011). These findings suggest that SMEs continue to struggle with their use of financial management technology across the board and that Latino entrepreneurs are no different.

We extend the TAM model with empirical evidence of a relationship between self-efficacy and the technology usage, by measuring actual usage frequency versus an intention to use. Another contribution is the exploration of an alternate technology usage describing the business process technology which is operationalized as business operation function: financial management and linguistic communication. The business owner's proclivity for one or the other will be based on the purposes and competencies available to the business owner.

These results imply that the cultural influence of collectivism, strong socialization, and community orientation does indeed favor importance of strong ties in their business affairs which can be reinforced through social media connection. It further supports the concept that the aspects of technology usage that can support economic development and growth such as financial management represents a gap in capacity that requires attention for future sustainability.

In terms of study limitation, we have sample size constraints in both the African American entrepreneur group (18%) and the White entrepreneur group (9%) which compile the "non-Latino entrepreneur" sample. Generalizability is a limitation as our sample was based on respondents enrolled in workshops in one city versus other geographic locations. Further research is required to assess a broader application. Another limitation of the study concerns self-report measures across bilingual (English and Spanish) platforms. Closer investigation to ensure that there is no common method variance which could inflate observed relationships between constructs is needed. Other predictive models for technology usage need to be examined which limit the impact of the collinearity between self-efficacy and resistance to technology.

## **IMPLICATIONS AND FUTURE RESEARCH**

This study has theoretical implications as it presents evidence to understand how ethnic minority entrepreneurs adopt and use technology as well as the impact that self-efficacy, resistance, frequency of use, and cultural values have on the ethnic minority entrepreneurs' willingness to use technology. Social media usage by Latino entrepreneurs actually exceeding non-Latino entrepreneurs invites further exploration of the various media engines, particularly with the "new normal" role that it plays in business development and operations. The implications for the training of ethnic minority entrepreneurs include increasing the focus of technology capacity building, particularly as useful in both business processes and customer marketing relationships due to the viability of this resource in generating growth and business sustainability. Exploring the impact of other factors such as age and gender particularly given the cultural roles that gender plays in various ethnic groups, and the perceived adaptability of technology by younger generations on technology adoption are opportunities for future research. Most importantly, researching the impact of technology adoption on small business outcomes and performance for small minority owned business is an opportunity for further investigation.

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**APPENDIX**

**TABLE 1**  
**CORRELATIONS AND DESCRIPTIVE STATISTICS:**  
**TECHNOLOGY USAGE, SELF-EFFICACY, RESISTANCE TO TECHNOLOGY**

			Std.	1	2	3
		Mean	Dev.			
<b>1</b>	<b>Technology Usage Overall</b>	3.00	1.10	<b>0.847</b>		
<b>2</b>	<b>Self-Efficacy Overall</b>	5.22	1.39	0.478**	<b>0.898</b>	
<b>3</b>	<b>Resistance to Technology Overall</b>	2.23	1.13	-0.380**	-0.591**	<b>0.782</b>

N = 89 \*\* p < 0.01, \* p < 0.05 Cronbach's alpha is reported along the diagonal

**TABLE 2**  
**RESULTS OF REGRESSION ANALYSIS WITH TECHNOLOGY USAGE**  
**AS DEPENDENT VARIABLE**

Variable	Model
Self-Efficacy	0.389**
Resistance to Technology	-0.150
F	13.786**
R Square	0.243
Adjusted R Square	0.225

Model statistics are Betas (standardized coefficients)

N = 89 \* p < 0.05 \*\* p < 0.01

**TABLE 3**  
**INDEPENDENT SAMPLE COMPARISONS OF LATINO &**  
**NON-LATINO ENTREPRENEURS**

Variables	Means and Sample Sizes				t
	Latinos		Non-Latinos		
	N	Mean	N	Mean	
Self-Efficacy	65	4.96	34	5.67	-2.609**
Resistance to Technology	65	2.44	33	1.90	2.533**
Financial Management: Business Process	54	2.28	31	2.25	0.122
Linguistic communication: Business Process	60	3.65	31	4.31	-2.542**
Social Technology	58	3.91	30	3.20	1.935*

\*\* p < 0.01, \* p < 0.05

**TABLE 4**  
**PAIRED SAMPLE COMPARISON OF LINGUISTIC COMMUNICATIONS**  
**FINANCIAL MANAGEMENT TECHNOLOGY FOR LATINO ENTREPRENEURS**

Variables	Means and Sample Sizes				t
	Linguistic Communication		Financial Management		
	N	Mean	N	Mean	
Bus. ProcessTechnology	54	3.60	54	2.28	8.945

\*\* p < 0.01, \* p < 0.05

## **BIOGRAPHIES**

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