

Understanding Black Males' IT Career Choices

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Abstract

The under-representation of Blacks in the information technology (IT) profession is a longstanding issue. The purpose of this study is to understand the factors that influence Black male college students to pursue IT careers. This paper presents the results of interviews with 27 Black males majoring in IT at a historically black university. Four themes (community encouragement, exposure to computing, hustler's ambition, "New Black") emerged as particularly useful for understanding IT career choice. These findings have practical implications for designing effective interventions that broaden the participation of under-represented groups in the IT workforce, as well as scholarly implications for the conduct of research on academic achievement and IT career choice of successful Black males.

Keywords: career choice, computer and information science education, computing occupations, diversity

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1 Introduction

Science, technology, engineering and mathematics (STEM) workers are instrumental in driving a nation's innovation and competitiveness. However, U.S. businesses frequently voice concerns over the supply and availability of STEM workers (Langdon, McKittrick, Beede, Khan & Doms, 2011). For instance, the Economist's (2011) special report on jobs concluded that unemployment is high, yet skilled and talented STEM workers are in short supply. The STEM skill divide is further evidenced in a report from the U.S. Department of Commerce which states that STEM occupations are projected to grow by 17% from 2008 to 2018, compared to 9.8% growth for non-STEM occupations (Langdon et al., 2011).

Black males, who currently are facing the highest levels of unemployment rate in the US, are disproportionately affected by these shifts in job markets (Eckholm, 2006). Aggregate numbers from the US Department of Labor (2012) show that Blacks experience poorer labor market outcomes than other races both prior to the recession and during the recovery. Moreover, Blacks are the only racial or ethnic group for whom women (53.8%) represent a larger share of the employed than do men (US Department of Labor, 2012). This further demonstrates how Black men face different and greater challenges in the labor market. Expanding the range of Black males' career options within an increasingly technology-oriented workforce will not only help alleviate the projected STEM skill gap, but will also help to alleviate the high unemployment often experienced by Black males.

Even with modest gains in recent years, the percentage of Black males in STEM careers, in general and IT careers specifically, remains far below the percentage of Black in the U.S. population. Black males comprise around 9% of the total workforce but only represent 2.2% of those working in IT occupations, which can offer lucrative job opportunities (U.S. Department of Labor, 2012). The IT workforce remains largely homogenous with White and Asian males over-represented, and Blacks and Hispanics consistently under-represented. In 2011, for instance, 67% of the total workforce was White, but they held 71% of STEM jobs. Asians held 15% of the STEM jobs compared with 6% of all jobs. Hispanics represent 11% of the workforce and 7% of the STEM workforce, while Blacks held 6% of STEM jobs and represented 11% of the workforce (Landivar, 2013).

The Schott Foundation's Black Boys report (Holzman, 2010) claims that the rate at which Black males are currently being pushed out of school and into the pipeline to prison far exceeds the rate at which they are graduating and reaching high levels of academic achievement; a trend which is supported by other

pipeline to prison studies (e.g., Bonczar, 2003; Haney & Zimbardo, 1998). The Schott Foundations report further suggests that in the majority of U.S. educational institutions, information about the conditions necessary for Black males to systemically succeed in education do not exist. This report indicates that Black male students do not have the same access to opportunities to participate in classes that offer enriched educational experiences. In fact, a Black male's educational success is often attributed to his unique abilities rather than the benefits he may have received from the system. This report concludes that a deliberate, intense focus is needed to disrupt and redirect the current educational trajectory for Black males (Holzman, 2010).

This sentiment is echoed by President Obama's "My Brother's Keeper" initiative which seeks to empower boys and young men of color. Launched in February 2014, My Brother's Keeper is developing a taskforce to address the disproportionate challenges and obstacles "found in our schools, our communities, our criminal justice system, our families, and even in the minds of our young people themselves" (Jarrett and Johnson, 2014). Educational barriers consistently identified in the scholarly literature include the pipeline to prison, a cycle of low expectations and poor academic achievement, an aggressive culture of Black masculinity, lack of role models, and impoverished communities (College Board, 2010).

To increase the IT education and career pipeline, however, it is necessary to first understand Black males' career development and choices, which unfold differently than for Black women and other ethnic male cohorts (Moore 2006, Kvasny, Joshi & Trauth, 2011). This study examines factors that shape the IT career choice of Black male college students. The prior literature on Black males is mostly populated with topics associated with their academic failures. According to Harper (2010) this relentless emphasis on the failures of Black men has helped to shape America's low expectations for them. Consequently, of those Black males who do succeed, we only know that they managed to avoid failure. The significance of our research is that we study Black males' success. We do so by conducting group and individual interviews with 27 men majoring in IT at a historically Black university to uncover how their perspectives about and interest in IT careers are constructed within their cultural realities and experiences.

2 Review of Literature

Several theories (e.g., Theory of Reasoned Action (Ajzen & Fishbein, 1980); Social Cognitive Career Theory (SCCT) (Lent, Brown, & Hackett, 1994); Expectancy Value Theory (Feather & Newton, 1982); Racial Identity Theory (Helms, 1990); Individual Differences Theory (Trauth, 2006)) are used to explain and predict general and STEM career choices. These theories, which are predominantly used to posit and test variance models, have considerably enhanced our understanding of the key predictors of career interest, intentions, and choice. However, as Lewis (2003) points out in a review on Black underrepresentation, the current body of research is highly uniform in both its theoretical and methodological approach, which limits our understanding of these issues. In his review, Lewis concludes that the research on Black under-representation tends to assume deficiencies in the life history of Black students; use survey samples of college students to identify the deficiencies that correlate with race and/or choice of major; and interpret those deficiencies as causal factors affecting career choice. Moreover, variance models fail to provide deep and rich insights into how the interest, choice, and intentions are formed and how individuals arrive at career decisions.

Another limitation of variance theories within the context of career choice is that they have generated mixed results that are open to multiple interpretations. Expectancy value theory, for instance, suggests that Black males may undervalue educational achievement and experience lower career expectations because of their socio-economic status (Feather & Newton, 1982; Graham & Taylor, 2002) or minority group status (Helms 1991). However, other studies have found that Black males place high value on educational achievement and success (Quimby, 2007). Alliman-Brissett and Turner (2010) found no significant associations among math related interests, efficacy, and outcome expectations among young Black adolescents. Conversely, the study conducted by Lent et al. (2005) which compared engineering interest of White and Black college students from historically Black and predominantly White universities found considerable support for SCCT (and social cognitive variables) but with very little difference between Whites and Blacks.

The findings with regard to the influence of contextual variables is also mixed. Some studies show that Blacks perceived few environmental and social barriers related to STEM careers (Quimby, 2007; Lent, 2005). Other studies have found that students of color are more likely than White students to perceive career-related barriers (Luzzo & McWhirter, 2001). There are also differences in how these contextual factors affect career interest and choice. Quimby (2007), for instance, found no relation between the perception of social barriers and interest in environmental science careers. Lent et al. (2005) found that social barriers have negative effects on interest in engineering for Whites but not for Blacks. While, Constantine, Wallace and Kindaichi (2005) reported that social career barrier perceptions among Black adolescents were positively related to career indecision. In contrast, Rollins (2001) reported that Black adolescents who perceived discrimination toward Blacks in the workplace actually indicated greater self-efficacy for various career decision-making tasks. Furthermore, Evans and Herr (1994) found no significant relation between perceptions of discrimination and the career aspirations among Black respondents. Some studies have shown that social support significantly increases various career outcomes among Black (e.g., Linnehan, 2001; Lent, 2005; Constantine et al., 2005). Whereas other studies do not support the relation between support from family and friends and STEM interest (Quimby, 2007).

In contrast to the variance models, researchers have conducted interpretive studies of the experiences of Black male collegians. This work focuses exclusively and qualitatively on young men who have persisted and succeeded in their chosen field of study. This small but growing body of literature presents a more cohesive set of findings. For instance, Charleston (2012) conducted interviews with 37 Black males majoring in computing science. He identified four themes that contributed to the students' success: early exposure to and engagement with computers and computing, positive interaction and socialization experiences, galvanizing factors related to computing science, and compulsory considerations for occupational decision-making with respect to a computing career. While early exposure to computers positively influenced academic excellence, Charleston (2012) found that it wasn't until the males entered college that they engaged substantially with computing. The importance of engagement applies not only to computing but also to the broader collegiate experience. Harper and Quaye (2009) report, for instance, that Black males who actively engage as student leaders earned numerous educational benefits and developmental outcomes including practical skills that were transferable to their careers, racial and gender development that helped them to overcome isolation and stereotypes, and easier college adjustment. Moreover, the achievers were rewarded with even more opportunities because they had few Black peers with similar leadership records.

Positive interaction and socialization experiences such as verbal reassurance, emotional nurturing, educational encouragement, and financial support had a strong positive effect on students' disposition toward mathematics, sciences, and computing (Charleston 2012). Similarly, participants in Harper's study of 219 successful Black male collegians reported that parental encouragement was the single most important differentiator between those who did and did not attend college. "Their friends' parents, the achievers believed, did not consistently maintain high expectations and were not as involved in their sons' schooling. By contrast, most of the achievers' parents and family members more aggressively sought out educational resources to ensure their success -- tutoring and academic support programs, college preparatory initiatives, and summer academies and camps, to name a few." (Harper 2010, p. 9)

A diverse array of applications including gaming, graphics and the Internet galvanized the males' initial interest in computing. However, it wasn't until students proceeded through their undergraduate programs that they made the connection that these interests could be developed into career opportunities (Charleston, 2012). Jett (2011) indicates that, when considering IT as a career option, Black males were positively inclined towards the major because of the large number of employment opportunities and the monetary rewards that technologists are expected to earn in the workplace.

One of the most interesting themes to emerge from the literature is that serendipitous influences, not aptitude, largely determined which Black males succeed. In other words, students worked hard, studied, and prepared themselves mentally. However, it was the "serendipitous" influences of educators that inspired them and connected them to their educational institutions. This support, however, was not given to all Black men. According to Harper (2010, p. 10), "Many participants felt that teachers (especially White women) were incapable of engaging meaningfully with more than one or a few Black male students at a

time – only these teachers' favorites received such attention." Consequently a significant number of Black males feel that their success was by chance, and not personal aptitude or effort.

3 Methodology

To investigate IT career choice, we conducted two NSF-funded studies. The first study consisted of surveys and focus groups with undergraduates majoring in IT at 3 predominantly white institutions (PWIs) and 9 minority serving institutions. For this paper, we only include the focus group data from 20 men at a single HBCU. The first author recruited these participants by presenting an overview of the research project during an information systems class. Black male students were then invited to sign up for the 90-minute focus groups held later that afternoon. All participants received a \$10 incentive. The intent of the focus groups was to uncover how and why socio-economic class, racial and gender identities affect perceptions about the IT major and career choice. The results of the first study suggest that Black men have perceptions about the skills and competencies needed to be successful in IT that differ from those of other demographic groups (Kvasny et al., 2011; Trauth et al., 2012).

The second study consists of interviews with 100 Black male undergraduates to more closely study their perceptions about IT and the IT profession. The researchers are currently recruiting students from 6 universities (2 PWIs and 4 HBCUs) that participated in the first study. In this paper, we include 7 interviews that were conducted at the HBCU where we conducted the focus groups. The authors recruited interview participants by presenting the study during an information systems class and inviting male students to schedule individual interviews. Participants received a \$25 incentive to take part in a 45 – 60 minute interview. Interviews were recorded and transcribed. The length of the interview transcripts ranged from 17 to 33 pages, with the average length of 19 pages. All of the interviews were conducted in a face-to-face setting with each co-author completing multiple interviews. The interview script focused on student's perceptions about individual and structural factors that help to explain their academic success and IT career choice. In answering the interview questions, participants were asked to reflect upon their life histories to identify critical events that motivated them to achieve academically and attend college, and inspired them to pursue IT careers. While discussing their life histories, participants were reminded to reflect upon how their race and gender shaped their educational experiences and career choice. During the interviews, probes were used to elicit further details, to clarify points of confusion, and to confirm understanding.

For this paper, the method of analysis consisted of the co-authors identifying emergent themes individually, and then negotiating a small set of common themes across the interviews and focus groups. The first author used this set of common themes to code the interview and focus group transcripts. Four constructs (community encouragement, early exposure to computing, hustler's ambition, new Black) emerged as particularly useful for understanding IT career choice.

4.0 Results

4.1 Community Encouragement

Men received encouragement for attending college from parents, family members, peers and others in their community. Mothers played a central in many men's narratives. For example, "My mom will back me to give me the chance to make my dreams come true. Push me all the way." Others describe how their fathers were involved in business and/or IT, and how this influenced their career choice. For instance, "My dad, he like was involved with technology because he worked around it, and I go his house. Sometimes he has computer parts here, probably a TV part over there, and just like in his car too like in his trunk. I wanted to do computers, and he taught me and my brother how to do computers...I wanted to come to college for that reason – to expand my knowledge on computers".

The strength of family support is evidenced through a football player's life history. This student was on a trajectory to become an NFL player when tragically, through no fault of his own, he was shot one evening during a gunfire exchange between rival gangs. With his dream unexpectedly ended, he was at a loss as to how to rebuild his life. While in high school, he perceived IT as a difficult subject reserved for geeks, and he thought programming was too difficult. With encouragement from his parents and brother, he now describes himself as unstoppable. "I play sports. I met a lot of other people in wheelchairs and seeing things that they do, I was like 'I have no excuse!'"

Participants also received positive affirmation through helping others in their communities. “Because when I was called like to troubleshoot a problem for computer or asked to go hook up the system straight out the box for somebody, and I felt confident because I was able to do it. It was up and running, and they got the results they wanted. I feel like, ‘Hey... I should actually go to college for this because I have some knowledge’, and I was getting feedback from people. They’re like, ‘you’re good at this. You should go to college for it.’” However, sometimes stepping away from the negative influence of underachieving peers and violent communities is necessary for success. One participant who started down the wrong path recalls, “I made sure that I stayed focused. Made sure I kept up with my grades. Less focused on trying to fit in with some of these different people that were living that bad lifestyles.”

4.2 Early Exposure to Computing

When men were asked what inspired them to pursue an IT career, they often responded with tinkering concepts like “the ability to create”, “take things apart”, “look under the hood”, and “natural curiosity”. The arrival of the first computers into the home served as the launching point for men to gain proficiency through surfing the web, communicating with others, watching videos, and conducting research. The determination to gain IT proficiency through hands on experience and informal learning was reported by all participants.

Video games served as a popular leisure pursuit but did little to inspire interest in IT careers. Parents, for example, would often use video games as a reward for performing well in school. This practice tended to reinforce the idea that games were just for fun and had little educational value. As one man in a focus group joked, “Everybody’s momma was telling them ‘you ain’t gonna make no money playing them games. Better hit them books or something!’”

Culturally, many Black boys are groomed to play sports. Sports were to be taken seriously because they could provide the scholarships that would enable them to attend college. One football player recalls how his coach told him that “you can get an education out of playing sports but video games are just for fun.” Another relationship between gaming and sports was expressed as “Everybody I looked up to was featured on the video game. I wanted my kids to play me on a game.” Here the goal was to become a world-class athlete worthy of being featured on a video game, rather than a software engineer who creates the game.

While video games weren’t seen as a galvanizing factor for IT career choice, athletic skills like attention to detail, discipline, and persistence were seen as transferable to computer programming. A baseball player recalls, “One thing my coach taught was hand-eye coordination. He said like when you’re hitting the ball, you only have to keep your eye on the ball. What that does with IT is like you have to pay attention to what you’re doing because like the slightest bit of mistake could ruin the whole program you had written.” He went on to say that getting in the zone mentally was key to success in the classroom and on the field. “I already made my mind up. I’m gonna do it. I can do it.... They can’t really move me out [of the zone].”

Overall, the only participants who were well informed about IT careers before they enrolled in college were those few with parents in the profession. Some less informed students talked about wishing that they could program so that they could customize their favorite games and wanted to play video games for a living, but assumed that pursuing an IT major in college would be too hard. They also believed that IT fun (i.e. playing video games) and IT work (i.e. studying computing) were incongruent practices. Participants felt that by middle school they were already being placed on different career pathways. If you were good in sports, teachers would lower academic expectations and you did not take the math and science courses necessary for majoring in STEM in college. Even in the affluent magnet schools, students were not directed to IT careers. One student who was good in math, for instance, discussed how his guidance counselor pointed him to accounting and finance. He was not exposed to IT as a college major until he took an introductory course in Management Information Systems.

Black males across the socio-economic spectrum acknowledged the importance of early exposure to IT in preparing them for the college major, but they also understood that race played a role in obstructing this exposure. One focus group participant made the point that Black males are primed to see their bodies, not their minds, as a way to make a living. “Athletes. Doctors. Lawyers. Engineers. That’s what you were

pushed to. Sports will get you free tuition. I just wanted to make money, and sports would do it.” Narrow-minded friends and family members sometimes ridiculed men who reached beyond the limited choices deemed appropriate for people like them. One man offered a heartfelt story about growing up in an impoverished community. As a teen he started “chillin’ with the wrong crowd” and was convicted of a felonious crime. Upon his release from prison, he tried to turn his life around and pursued an Ivy League education. “It is impossible to do and that’s what really gave me the motivation to actually try to do it...That’s something that if I go around my dad’s house and we got a couple of friends over and we just casually hanging out, so to speak; and I said, ‘I want to go to Harvard.’ That’s a joke...At first it was a dream but it was a dream worth working for. With hard work and prayer, God’s been opening doors for me.”

4.3 Hustler’s Ambition

The push for wealth and prestige is central to Black males’ IT career choice. Men mentioned that they were the generation who grew up with Facebook, MySpace, and Twitter. The owners of these well-known startup companies achieved enormous popularity and financial success, and serve as important role models for becoming a legitimate hustler. In African American culture, a hustler is a person who uses his or her exceptional enterprising talent to sell something. It is the entrepreneurial spirit that is exuded by many contemporary hip hop moguls such as Jay-Z who famously says “I’m not a **businessman**, I’m a **business, man!**” to signify that he’s bigger than a corporate executive. He’s a brand! According to Rose (2009, p. 227),

A hustler usually involves illicit economies: sex, gambling, drugs, and general criminal activity. The fact that poor Black people have been economically excluded and marginalized and disproportionately kept at entry level positions has aided the expansion of various illicit economies...The glamour associated with hustling as a form of economic success...has become a nearly completely legitimated standard in hip hop. Being a hustler is the central model of success. Hip hop rhetoric presumes that the ‘normal’ mode of success (schooling, hard work, and talent provide opportunity and upward mobility), as a model for ‘getting out of the ghetto’, is completely cut off for Black youth. Independent, most likely illegal, entrepreneurial activity is the only way.

The Black males in our study applied this ethos of hustling to legitimate modes of success. Entrepreneurship was seen as a desirable and lucrative IT career choice. For instance, during a group interview, one man remarked sarcastically, “I can start my own business. PayPal is the dumbest thing ever to me. Why give your money to the middleman? You’re paying your money to someone to pay someone else. Why? Why not go straight to the man. PayPal is a scam!” Another participant quickly challenged this remark. “PayPal is a smart hustle. I could have thought of that – take your money and give it to someone else!” Laughter ensued, but it is encouraging to see students making the observation that economic success could be gained from a rather simple idea implemented with technology. The young men went on to discuss the offshoring of manufacturing work and the growth in low paying service jobs, and acknowledged the economic hardships for many who lacked a college degree. “An executive said to me that people need to have a mindset to not just get a job; the mindset should be to create a job. Never thought about that. Internships. Working your way up. Nah, teach me how to create jobs... Change our mindset to innovation and job creation – that’s what IT is.”

The economic risk associated with entrepreneurship, however, is uncomfortable for many African American parents. A focus group participant tells a story about starting his cleaning business while in college. “My momma would rather me keep my job at Chuck E. Cheese than start my own business. She was happy once I started making money (laughter). But I understood because if I failed she couldn’t help me. She was barely making it herself so she wanted me to play it safe.” This mindset that “risk is okay because failure is not an option” permeated every interview.

Hustling is not only about making money; it’s also about sharing money and your talents with the community. For these men, the desire to see a young Black male achieve the success of Mark Zuckerberg is hugely important. One interviewee laments, “As far as big corporations....when they bring up the new systems and the new technology, it’s always the White man...Like no African Americans on the stage...I think that if we could at least get one on stage to explain what the technology is, how it

works, and when it's going to come out, then I think that other African American males would be like, 'Hey I wanna be where he's at. I wanna make his money.'"

4.3 New Black

"New Black" is a term popularized by Pharrell Williams, a Grammy Award winning singer-songwriter and record producer. During a 2014 interview with Oprah Winfrey, Williams explained, "The new Black doesn't blame other races for our issues. The new Black dreams and realizes that it's not a pigmentation; it's a mentality. And it's either going to work for you, or it's going to work against you. And you've got to pick the side you're gonna be on."

Participants attempted to employ this new Black ideology where they could excel in a post-racial society, but oftentimes their stories betrayed this logic. For instance, one male critiqued how society constructs and perpetuates a caricature of Black males as thugs and unintelligent, which limits the diversity of Black male identity expression. "Most of the skeptics don't consider Black men even going to college now. They're telling me that we're dead or in jail. Then most athletes that go to these big schools and get these scholarships, most of them go for ...anything but IT or computer science because they lack the intelligence to succeed." A Black man going to college for IT is seen as doing something extraordinary.

New Black ideology can, however, positively motivate Black male achievement. This may occur, for instance, when Black males find ways to use stereotypical notions of their physical bodies as strong and athletic to their educational advantage. As one athlete remarks, "I'm gonna use football for as long as it's using me. Not that I gotta get a job, but it makes me a Black man with a PhD. White people are more willing to hire me with a PhD. Skin color works against us." This quote also reflects the common refrain heard by African American youths for generations – "you have to work twice as hard to get half as much". Indeed, while some participants attempted to embrace the new Black ideology, race continues to play a role in framing their IT career choice and affirming their need to work hard. As one man said in his interview, "Sometimes, I guess you can say it's harder for Black American men to do certain things because of stereotypes; because of that instantaneous, automatic frame of mind people will have about you. I don't know. I try and not really focus on that too much. I'm not one who likes the idea that something else could affect my destiny and my life that much for me to care. I'm more of a take charge kind of guy. I like the idea that I'm in control of my own life." Behind these quotes is the belief that if you are just average, the race factor would not work in your favor.

Even though these men felt that race made their journey harder, they refused to let it become a crippling obstacle. As a focus group participant states, "We have a Black president. We got Black doctors, Black lawyers, Black everything... Racism is always there. But I know that in business it's all about money. Justice comes with a price. At the end of the day you gotta feed your family. Your own color will bring you down [if you get caught up in playing the race card]." This is not to say that they saw a corporate IT career as an end to racism, but rather that racism could only deter them from their career goals if they let it stifle their dreams.

4 Conclusion

This study contributes to research and practice in significant ways. The practical contribution of our findings about how IT career choice is constructed by Black men may help to inform interventions that seek to broaden career opportunities for the group which is experiencing the highest levels of unemployment in the country. Black men actively use IT from a young age, but many are not exposed to IT careers until they arrive on campus. Parents, educators and guidance counselors play an integral role in shaping college attendance, but these actors are limited in their understanding of IT careers. Consequently, interventions for Black males should occur early and include those in their social support network. These findings are consistent with the prior literature that looks at successful Black males.

The research contributions include two new constructs, hustler's ambition and new Black, that extend understanding of how IT career choice is constructed within the cultural realities of Black males. Both constructs are informed by a narrative of ascent, which suggest movement upwards from poverty and racism, respectively.

Perhaps most importantly, this study contributes to the limited literature on Black males' academic success. By focusing on success factors, we are able to understand how they conceptualize and negotiate the embedded social structures that become insurmountable barriers for so many of their peers.

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