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Applying a Gender Lens to the Predictors of High-Tech Career Intentions among Engineering Students in Bangladesh

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ABSTRACT

This paper explores the extent to which perceived job attributes, perceived male dominance in the high-tech sector, and perceptions of the media's gendered representation of high-tech might influence students' intentions to pursue a career in the high-tech sector. A survey was conducted with 209 female and 640 male engineering undergraduate students in Dhaka, Bangladesh. The results suggest that both female and male students are attracted to high-tech when they view it as a challenging career. Gender role stereotypes also influence career intentions, but women and men are influenced by different types of gendered norms. Women are influenced by the attitudes toward the suitability of high-tech careers for women and men are influenced by male media representation. The results do not support previous findings that female students perceive high-tech work as boring but support previous findings on the negative effect of gender stereotyping on female students' interest in pursuing a high-tech related career.

KEYWORDS

Gender; career; engineering; technology; Bangladesh.

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INTRODUCTION

The high-tech sector is an important source of economic growth and high paying employment (Ashcraft, McLain, & Eger, 2016; Wright & Dwyer, 2003). However, women's underrepresentation in the high-tech sector has been, and continues to be, of concern for both industry and academia (e.g., Ahuja, 2002; Prescott & Bogg, 2013; Snir, Harpaz, & Ben-Baruch, 2009; The US Equal Employment Opportunity Commission [EEOC], 2016). While the rate of female enrolment in high-tech related programs is declining in the USA and Canada (Ashcraft et al., 2016; Hango, 2013), women's enrollment in high-tech related undergraduate programs in a number of Asian countries such as Bangladesh, China, India, Malaysia, Philippines, Srilanka, and South Korea is on the rise (The Association of Academies and Societies of Sciences in Asia [AASSA], 2013). For example, the National Association of Software and Service Companies (NASSCOM) noted women represented 46.8% of the postgraduates in Information Technology (IT) and Computing majors during the academic year 2014-2015 in India which is twice the enrollment rate seen in the UK (Raghuram, Herman, Ruiz-Ben, & Sondhi, 2017). Likewise, in Bangladesh, the proportion of women in the leading engineering university, Bangladesh University of Engineering and Technology (BUET) increased from 15% in 2002 to 19.2% in 2010 (AASSA, 2013). A similar trend was found in Shahjallal University of Engineering and Technology where, the percentage of women students increased from 14.1% in 1999 to 24.1% in 2009. Overall, the proportion of women students was approximately 20% among the top-ranking engineering and technology universities in Bangladesh in 2010. Current national data from Bangladesh is not available, however, the enrollment of women in engineering and technology majors is on the rise across Asia (AASSA, 2013). The increased enrollment in engineering and technology majors indicates that more women are drawn to technology majors, however, the question is, will they work in high-tech careers after graduation? What factors may influence students' interest in pursuing a high-tech career? And, do such factors play a different role in the career intentions of women and men?

Extant research on women's underrepresentation in tech careers highlights factors such as gender stereotyping, a dominant male culture, discriminatory organizational practices and lack of role models and mentors (Ashcraft et al., 2016; Hango, 2013; Kuskü, Özbilgin, & Özkale, 2007; Prescott & Bogg, 2013; Wajcman 2000). The socio-economic culture of a country may also influence attitudes toward certain occupations (Adya & Kaiser, 2005; Mellström, 2009; Pio & Syed, 2013; Trauth, 2002). Alternatively, there may be factors that encourage women to pursue high-tech careers such as families that place a high value on women having technology careers, a national culture that strongly promotes IT, a single-sex high school system which may allow female students to develop aptitudes and interests in technology in the absence of male pressure to conform to gender stereotypes (Adams, Bauer, & Baichoo, 2003; Adams, Baichoo, & Bauer, 2006), political

ideology that emphasizes gender equality; national policy that supports female education in science and technology (Ecevit, Gündüz- Hoşgör, & Tokluoğlu, 2003; Küskü et al., 2007), positive attitudes toward math, science, and technology careers (von Hellens, Neilson, & Trauth, 2001), and the status and prestige of technology careers (Adya & Kaiser, 2005). Although the extant research makes an important contribution in identifying these factors, these factors may not apply uniformly across cultures and countries (Klarsfield, 2010).

Thus, the purpose of this study is to identify the factors influencing science and engineering undergraduate students' intentions to pursue a career in the high-tech sector in Bangladesh. By examining these factors, we hope to enhance our understanding of how gender may influence career choices in a South-Asian cultural context. AASSA (2013) noted that despite the diversity present in Asian countries, the situation of women in science, technology, engineering, and mathematics (STEM) is very similar across many of the South-Asian countries. Moreover, these South-Asian countries like most Asian countries, share some common Eastern cultural values such as an emphasis on hierarchy, obedience, morality, respect, and belongingness (Frith & Frith, 1990; Jamil, 2002). The current study will shed light not only on the factors that may be the driving force for girls and boys to pursue high-tech careers but also adds to the small body of research that has examined the predictors of career choice among science and engineering students in Eastern cultures (Adams et al., 2006; Ecevit et al., 2003; Eidelman & Hazzan, 2005 & 2006; Gokuladas, 2009; Küskü et al., 2007). It is intended to contribute to a better understanding of the female representation in high-tech sector in an under-researched context (Saifuddin, Dyke, & Hossain, 2019).

The High-Tech Industry

According to Frenette (2007), the term high-tech is generally associated with the information, communication, and technology (ICT) sector. Eighty-eight percent of the workforce in this sector is comprised of the computer and telecommunication sectors, including both manufacturing and service. It is worth noting Frenette's (2007) definition of 'high-tech' represents the technology sector in general and is referred commonly as 'tech'. In this paper, we have used the term 'high-tech' and 'tech' interchangeably. High-tech is a growth industry and developments in this sector can drive societal changes. As a consequence, women's under-representation in this sector can undermine equality.

THE BANGLADESHI CONTEXT

Bangladesh is a patriarchal, patrilineal, and patrilocal society where 98% of the population belong to the Bengali ethno-linguistic group. In this patriarchal, monoethnic society women traditionally derive their role from family and society at large. Even when women are working, their income, if single, is controlled by their fathers or the patriarch of the household. If married, a woman's income is controlled by her husband or in-laws (Chowdhury, 2010). Bangladesh is also a predominantly Muslim country where 88% of the population practices Islam. Islamic beliefs regarding women and family further strengthen patriarchal practices (Chowdhury, 2009). Moreover, Bangladesh, like many Eastern cultures, places great emphasis on hierarchy, obedience, morality, and respect (Dutta & Islam,

2016; Jamil, 2002). Women are located below men in this hierarchy and women's hierarchical subordination underpins patriarchy. At the societal level, women's patriarchal subordination is the norm, while at the individual level, many women are uncritical of the patriarchal aspects of their own culture (Goetz, 2001). Women's representation in the Bangladeshi workforce is increasing and women are emerging in public spaces as economic agents (Asian Development Bank and International Labour Organization, 2016) but here too, women experience lower status than men. According to the Labour Force Survey 2016-2017 (Bangladesh Bureau of Statistics, 2018), women's share of high-status occupations such as chief executive officer, legislator, senior official, and management is only 10.7%. A gender wage gap exists with a female pay ratio of 57% of male pay for similar work (World Economic Forum [WEC], 2017).

The education system of Bangladesh is divided into three levels – primary, secondary, and tertiary. According to a joint report conducted by the Bangladesh Bureau of Statistics, UCEP, and Diakonia (2017), the overall net enrolment rates in primary, secondary and tertiary education have increased from 2010 to 2015 for both boys and girls. In 2010, the net enrolment rates in primary education for boys and girls were 92.2% and 97.6% respectively and they reached to 97.1% and 98.8% respectively in 2015. For secondary education, the net enrollment rates for boys and girls were 44.6% and 55.1% respectively in 2010 and they reached to 62.6% and 71.9% respectively in 2015. The report does not give net enrollment rates for tertiary education but gives the breakdown for higher secondary net enrollment. For higher secondary education, the net enrolment rates for male and female in 2011 were 16.9% & 17.8% respectively increasing to 26.2% and 30.25% respectively in 2015. Net enrollment data up to higher secondary indicates higher enrollment rate for girls than boys. Net enrollment data is not available for tertiary education but according to United Nations Educational, Scientific, and Cultural Organization (UNESCO, 2019), the gross enrolment rates for male and female in 2011 were 15.6% and 10.8% respectively increasing to 20.6% and 14.5% respectively in 2017.

Although women's and men's participation are increasing in tertiary education, data indicate that women outnumber men in majors that are considered to be traditionally female-dominated such as arts and humanities, education, and social sciences. For male-dominated majors such as engineering, manufacturing, construction, and information and communication technologies, the female to male ratio is much lower than 1. Table 1 gives the detailed breakdown on graduates by degree type and gender. The table is from the WEC's Global Gender Gap Report (2017). The underrepresentation of women in STEM careers begs for research to identify factors that may have played an important role in influencing students' choices of majors in undergraduate studies.

CONCEPTUAL FRAMEWORK

Extant research has identified various factors that contribute to the underrepresentation of women in high-tech sector. The key factors include gender role stereotyping, perception of technology as a male domain (e.g., AASSA, 2013; Michie & Nelson, 2006; Prescott & Bogg, 2013; Snir et al., 2009; von Hellens,

Neilson, & Beekhuyzen, 2004), negative workplace experiences (Ashcraft et al., 2016), limited access to mentoring and networking opportunities (Cross & Linehan, 2006), gendered representation of high-tech in the media (Adya & Kaiser, 2005), lack of access to challenging opportunities (Ashcraft et al., 2016), and work-family conflict (Tai & Sims, 2005; Truman & Baroudl, 1994).

Table 1: Percentage of Tertiary Level Graduates by Degree Type and Gender

Graduates by Degree Type	Female* (%)	Male* (%)	Female to male ratio**
Agriculture, Forestry, Fisheries and Veterinary	0.4	1.2	0.35
Arts and Humanities	37.1	29.8	1.24
Business, Administration and Law	12.9	28.9	0.45
Education	8.1	1.7	4.78
Engineering, Manufacturing and Construction	0.2	4.5	0.05
Health and Welfare	1.6	2.3	0.69
Information and Communication Technologies	0.2	2.0	0.08
Natural Sciences, Mathematics and Statistics	9.4	13.9	0.67
Social Sciences, Journalism and Information	28.2	15.6	1.81

Source: World Economic Forum (WEC, 2017: p. 79).

Note: *Column represents percentage of female or male students graduating in the major. Each column generally adds up to 100 percent. **According to the WEC report, all data is converted to female-to-male ratios. For example, the female-to-male ratio of graduates in arts and humanities with 37.1% of women and 29.8% is calculated by dividing women graduate percentage by men graduate percentage i.e. $37.1 \div 29.8 = 1.24$.

Ahuja (2002) proposed a life-cycle stage model of factors that impacts women's career in the information technology sector. According to the model different social and structural factors influence women's careers at the career choice, career persistence and career advancement stages. The social factors in Ahuja's model include both social and cultural biases and incorporate women's internal view of themselves (self-expectations) and the external view of women held by the society (e.g., stereotyping) as well as work-family conflict and lack of informal networks. The structural factors refer to the barriers that result from the structure of institutions and include occupational culture, lack of role models and mentors, and institutional structures. According to the proposed model, the impact of these social and structural factors may vary depending upon career stages. While social factors such as perceptions and stereotyping may be more influential at the career choice stage, both social and structural factors such as access to networking opportunities and lack of mentors may play more influential roles in the career persistence and advancement stages. Additionally, these social and structural factors may interact and create greater obstacles for women in the career choice, persistence, and advancement stages. For example, in the career choice and persistence stages, a male dominated occupational culture may interact with gender stereotyping and discourage young girls or women from choosing IT as an undergraduate major or push women out of IT careers. In the career advancement stage, women who may

be required to work longer hours see an increase in work-family conflict and can be subject to negative attitudes due to not fulfilling gender appropriate family roles.

Adya and Kaiser (2005) expanded the career choice component of Ahuja's model proposing a more extensive list of factors that influence women's choice of IT careers. Career choice is generally made during university education and is defined as the likelihood that a student will choose a particular major that is likely to shape one's future career path (Ahuja, 2002). Adya and Kaiser (2005) identified two categories of factors: social and structural. Social factors include family, peer group, and media influences. Structural factors affecting the choice of an IT career include computer use, role of teachers and counsellors, access to technology in school and at home, and same-sex education. The three social factors are hypothesized to influence career choice through the mediating role of gender stereotyping. Access to technology in school and at home are hypothesized to influence career choice through the mediating role of technology resources. Taken together, these social and structural factors will influence young girl's career choice. The authors acknowledged that these social and structural factors function in the context of ethnic culture and could vary in influence across cultures. Also, the factors may have differential impact on choice of major due to individual differences.

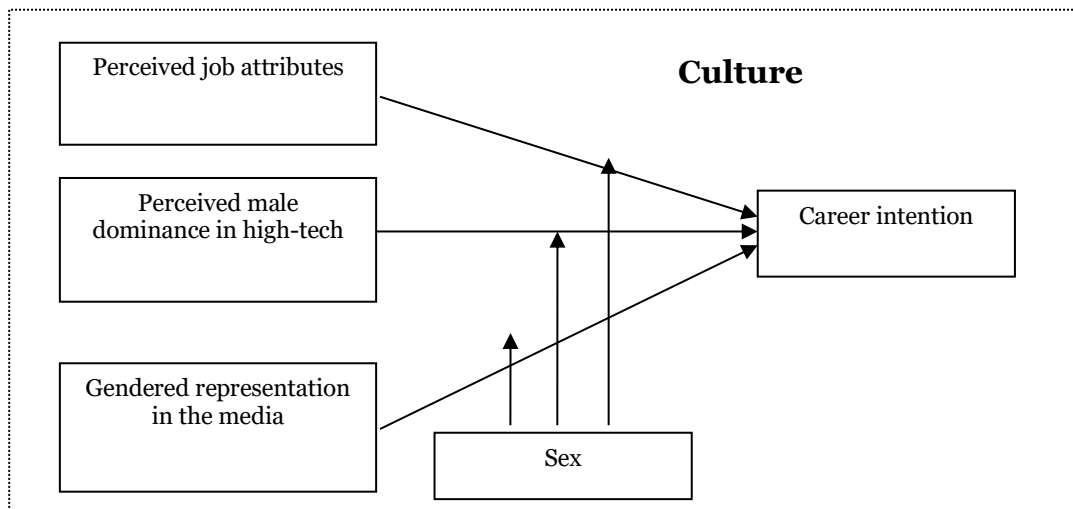
Our model builds upon the work of Ahuja (2002) and Adya and Kaiser (2005) and focuses specifically on career intentions. Intentions are a goal mechanism through which individuals may be motivated to engage in activities to obtain a particular future outcome (Bandura, 1986). Intentions could be called expressed choices, plans or decisions that represent goals symbolizing future outcomes (Lent, Brown, & Hackett, 1994; 2000). For this study, career intention refers to an individual's intention to pursue a high-tech career and forms the dependent variable. Following the theory of planned behavior (Ajzen, 1991), career intention is expected to be a strong predictor of actual choice and entry into a given career – here, the high-tech sector.

Although both social and structural factors are important, in previous studies on the Bangladeshi context, social factors have emerged as a more dominant force on women's careers. Saifuddin et al. (2019) investigated barriers women high-tech professionals face in their careers in Bangladesh. The findings indicated that deeply situated socio-cultural norms and patriarchal practices create gendered perceptions and biases that played a significant role in impeding women's careers in Bangladesh. On the contrary, the presence of structural factors such as organizational policies with respect to pay and promotion, mentoring, and networking played a lesser role. In another study, Hossain and Kusakabe (2005) highlighted the barriers faced by women at different career stages – entry, persistence, and growth in the construction industry. The study found that structural barriers are influenced by social-cultural norms and gender stereotyping – whether it be through discriminatory recruitment practices or by assigning women to positions that lack access to opportunities for growth and advancement. Although the industry type is different – high-tech versus construction – both

studies looked at barriers in male dominated industries. Bias and stereotyping were identified as the root cause of barriers in both studies.

Because our goal is to understand how gender influences career choices, we focus on social factors as our independent variables. Specifically, we explore the extent to which perceived job attributes, perceived male dominance in the high-tech sector, and perceived gendering of high-tech in the media may influence students' intentions to pursue a career in the high-tech sector. Sex is included in the model as a moderator as these factors may have differential effects on the career intentions of women and men. Although we recognize that there is variation in gender role (masculine versus feminine; not all women adopt "feminine" traits), we chose to focus on sex rather than gender role for three reasons. First, many of the gender barriers identified in the tech sector reflect gender-biased treatment which is based on women's sex rather than their gender roles. Second, Bangladesh is still a largely patriarchal society where traditional gender roles are reinforced in both the public and private spheres (Chowdhury, 2009). And finally, the research and policy concerns regarding gender representation in the high-tech sector relate to the representation of women as a sex instead of the representation of people who endorse specific gender roles. Although direct comparisons across cultures are not possible in a single-context study such as ours, our model acknowledges culture may play a role in shaping these dynamics and thus includes culture as a contextual factor. Our model is summarized in Figure 1.

Figure 1. A proposed model of career intention.



Perceived Job Attributes

Perceptions about different aspects of a particular job or a profession are identified as a major factor that influences students' career choices (Gokuladas, 2010) but relatively few studies have investigated the influence of perceived job attributes in the career choice of engineering students (Ahuja, 2002). Perceived job attributes may include both intrinsic factors (i.e. when an individual is motivated for reasons internal to the self) and extrinsic factors (i.e. when an individual is motivated for reasons external to the self) (Presscott & Bogg, 2013). Aycan and Fikret-Pasa

(2003) found that mainly extrinsic factors - power and authority, opportunity for career advancement and pay were the most important determinants of career choice among a sample of Turkish students. Savage and Birch (2008), investigating career choice in a sample of undergraduate students in the UK, found that intrinsic factors (e.g. career growth) seemed to be more important than extrinsic factors (e.g. prestige). Gokuladas (2010) also found that engineering students' career choices in India were more strongly influenced by intrinsic factors than by extrinsic factors. However, male students were more influenced by intrinsic factors such as learning and growth while female students were more influenced by extrinsic factors such as status of the company.

Gender differences in perceived job attributes, or their importance, may help to explain gender differences in career choices. von Hellens, Pringle, Neilson, and Greenhill (2000) in their research on university students' perceptions of IT proposed that female students' perceptions of information technology may reflect the typical "nerdy" stereotype of tech sector which portrays the profession as not being very dynamic or rewarding. Research suggests that both male and female students have a poor understanding of career prospects in the IT industry, perceive IT as a masculinized domain, and female students especially view IT people as "computer nerds" (von Hellens et al., 2004; 155). Women tend to disassociate themselves from the image of the computer nerd (Joshi & Kuhn, 2001). In a survey with first-year Information Systems and Business undergraduate students by Thomas and Allen (2006), students overall found the IT jobs to be "very technical" (p. 175) but female students held more unfavorable views and perceived the IT jobs as "nerdy and uncool" (p.175). Other studies have also reported that female students feel discouraged from pursuing computing careers as they perceive it as boring (Miller et al., 2004; Thomas & Allen, 2006) or geeky (Prescott & Bogg, 2013).

In the current study, we focused specifically on three key possible attributes of high-tech careers: financial rewards, prestige and creativity/challenge. To the extent that students perceive high-tech careers to possess these positive attributes, we would expect them to be more likely to choose tech careers. We included two extrinsic and one intrinsic attribute for two reasons. One, Bangladesh is a lower-middle income country where more than 24.3% of the population live in poverty, and 12.9% of the population live in extreme poverty. The perceived value of financial rewards may hold high importance given the Bangladeshi economic context. Second, earlier studies have found prestige of an occupation to be an important determinant of career choice in South Asian contexts (Gokuldas, 2010; Upadhaya & Vasavi, 2006). Finally, the dimension of creativity/ challenge was included because research has found women who pursue technology careers do so because they find the job to be "creative and competitive" (von Hellens et al., 2004; p. 156). The relative importance of each of these attributes to students' career intentions may vary, however, according to gender. Social role theory (Eagly, Wood, & Diekmann, 2000) suggests that due to normative pressures, women on average may portray themselves as less agentic and more expressive than men. This may lead them to prefer more intrinsic rewards such as challenge over extrinsic factors such as financial rewards and prestige. Conversely, on average

men are expected to be more agentic and externally driven which may lead them to place greater value on extrinsic rewards rather than intrinsic ones. Thus, in contrast to Gokuladas (2010) findings, we propose the following hypotheses based on social role theory:

Hypothesis 1a: *For female students, the perceived challenge of a high-tech career will have a greater positive impact on their career intentions than its prestige or financial rewards.*

Hypothesis 1b: *For male students, financial rewards and prestige of a high-tech career will have a greater positive impact on their career intentions than its challenge.*

Perceived Male Dominance in High-tech

High-tech sector is generally considered a gendered domain as the composition of the tech workforce is significantly skewed toward men (Sargent, 2005) and tech workplaces are constructed and maintained as men's work (Cockburn, 1983, 1988; Michie & Nelson, 2006; Snir et al., 2009; von Hellens et al., 2004; Wajcman, 2000). For instance, the high-tech industry traditionally projects a macho image which is rigorous and impersonal in approach. Extant research indicates that in such male dominated fields, gender bias permeates the workforce and women are often seen as less intrinsically capable than men – resulting in lower pay and fewer advancement opportunities compared to men (Cross & Linehan, 2006; Hewlett et al., 2008). The gendering of the high-tech workplace may discourage female students from choosing a career in this sector (AASSA, 2013; von Hellens et al., 2004). Studies indicate female students see technology primarily as difficult and boring (von Hellens et al., 2004) and they are consequently uninterested in such careers. While parents, peers, and teachers may influence career choices, these role models may, themselves, view high-tech as a masculine domain and consequently reinforce gendered career stereotypes (Smart & Rahman, 2009). Adya and Kaiser (2005) suggest that teachers and counselors may further influence gender stereotyping of roles and choices by advising girls to choose traditional female careers and boys to choose traditional male careers.

Although the majority of female students avoid high-tech as a field of study, the young women who do choose to pursue higher education in technical fields often find their self-efficacy and interest in the field diminished by repeated exposure to a male biased environment, negative comparisons to peers, and poor pedagogy (Margolis & Fisher, 2002). Both men and women who want to continue their career in high-tech must adapt to a masculine domain (von Hellens et al., 2004). For many women professionals, this "forced" adaptation may be incompatible with their female identity, causing psychological pressure. Therefore, we expect to observe a negative relationship between perceived male dominance in the tech sector and female students' intentions to pursue a career in the sector. However, perceived male dominance in the tech sector may not influence male students' intentions to pursue a career in the sector. This reasoning leads to the following hypotheses:

Hypothesis 2a: *Perceived male dominance in the high-tech sector will negatively influence female students' intentions to pursue a high-tech career.*

Hypothesis 2b: *Perceived male dominance in the high-tech sector will be unrelated to male students' intentions to pursue a high-tech career.*

Gendered Representation in the Media

Existing evidence suggests that high-tech related print and electronic media are heavily gendered and under-represent women. There are very few pictures of women in computer magazines and textbooks (Na, 2001). In addition, the existing pictures often portray women in a stereotypically passive role rather than as active technology users (Brownell, 1992). Furnham and Mak's (1999) review of television advertisements in Asia, Australia, Europe, North America, and South America indicated that gender stereotypes are pervasive in the global media.

Although specialized media (e.g., trade journals) have begun to represent women in professional roles, they may not be of interest to female undergraduate students (Adya & Kaiser, 2005). Lang and Hede (2004) analyzed two computer magazines and two "in-demand" teenage girl magazines in Australia over a period of one year. The authors reported that while males and females were represented equally in the computer magazines, there was no depiction of computer use in the teenage girl magazines. Thomas and Allen's (2006) study revealed that the majority of first year information systems and business undergraduate students could not name any female role models in the IT industry from real life or from TV or film. Some of the role models mentioned were cartoon characters. In addition, both male and female students indicated media as one of the main sources from which they gained their knowledge of IT careers (Thomas & Allen, 2006). However, it is worth mentioning, with the increased use of social media, teens now may gain information on potential career paths through social media than more traditional media outlets. Popular movies and television shows "depict computer scientists and engineers as mostly White (and more recently Asian) males" (Cheryan, Master, & Meltzoff, 2015: p. 4) and females are often seen in "novice or impotent roles" (Johnson, Rowan, & Lynch, 2006: p. 9). The gendered representation of engineering and technology in the media can further strengthen the stereotypes that these careers are more suitable for men.

While gendered representation of high-tech in the media is often cited as contributing to gender bias in the sector (e.g. Adya & Kaiser, 2005; Cheryan et al., 2015), with a few exceptions (e.g., Thomas & Allen, 2006) it is difficult to find empirical studies that have tested this notion. One study, Cheryan, Plaut, Handron, and Hudson (2013) that examined the influence of stereotypical and non-stereotypical media representation of computer scientists in newspaper articles found that women respondents who read the stereotypical article expressed less interest in computer science majors than women who read the non-stereotypical article. Furthermore, women who read the non-stereotypical article were significantly more interested in computer science than women who read no article. In this study, we have attempted to empirically investigate the role of media by examining the impact of undergraduate students' perceptions of the presence of

female or male anchors and models in TV, radio, and print media. Specifically, we examine the following hypotheses:

Hypothesis 3a: *Female students' perceptions of the presence of female anchors and models in high-tech programs in media will be positively related to their intention to pursue a career in the high-tech sector.*

Hypothesis 3b: *Male students' perceptions of the presence of male anchors and models in high-tech programs will be positively related to their intention to pursue a career in the high-tech sector.*

METHOD

The hypotheses were tested using survey data collected from undergraduate engineering and technology students in five Bangladeshi universities. The five universities included two public universities and three private universities – all of which offer engineering and technology programs.

Procedure

Relevant faculty members from eight Bangladeshi universities were contacted with the request to give access to their classes in order to administer questionnaires to their students. Faculty members from five universities expressed their willingness to participate. These faculty members were then contacted by the first author to schedule time and dates for the survey administration. On the scheduled dates, the faculty member introduced the first author and briefly explained the purpose of the study and left the classroom. The author invited the students to participate and distributed the survey packages. Each survey package contained an information sheet, questionnaire, and an envelope.

Participants were asked to complete the questionnaire in the class and return it in the sealed envelope. An announcement was made that participation was voluntary and students should return the questionnaire to the researcher in the sealed envelope whether it was complete, partially complete, or blank. The information sheet contained details on the purpose of the study, the risks and benefits involved in participation, and the rights of participants. Students responded to the surveys in class and returned them to the researcher in the sealed envelope in approximately thirty minutes.

No consent form was signed, since the information sheet addressed all of the issues that are typically covered in informed consent and debriefing forms. Moreover, the responses were meant to be anonymous. Completion and return of the survey were taken to imply the consent of participants (Dillman, 2000).

Sampling Method and Sample Size

The overall sample was a 'sample of convenience'. Convenience sampling is appropriate in cross-sectional data collection particularly when there are no accurate or accessible lists of the total population available (Lonner & Berry, 1986). A total of 1,248 surveys were distributed in 27 different engineering undergraduate classes. Since all distributed surveys were collected in sealed envelopes, the

researcher sorted out the ones that were either blank or partially completed. From the collected questionnaires, 849 surveys were found to be usable through manual screening for the present study.

Measures

The primary research question related to this analysis was, "What factors may influence students' interest in pursuing a high-tech career?" Due to the lack of validated measures for the South Asian context, the survey questions were either adapted from previous studies or developed for this study based on conceptualizations in the research literature. To evaluate the suitability of the adapted measures, principal axis factoring with varimax rotation was used. The details on evaluation of measures are discussed in the results section. Response options for survey questions ranged from "strongly disagree" (score of 1) through "neither disagree nor agree" (score of 3) to "strongly agree" (score of 5). The details of each measure are described below.

Career intentions. The dependent variable was measured by asking students to indicate how likely it was that they would pursue a career in the high-tech sector. Responses ranged from "very unlikely" (score of 1) through "maybe" (score of 3) to "very likely" (score of 5).

Perceived job attributes. Three job attribute scales were developed by the researchers to reflect perceptions of high-tech as: financially rewarding (4 items), prestigious (3 items), and challenging (3 items). The items were similar to the items and concepts used by Thomas and Allen (2006) and Gokuladas (2010). A sample item is "I see high-tech as a prestigious career."

Perceived male dominance in the high-tech sector. Five items from Küskü et al.'s scale (2007) were adopted with slight modifications for this study. A sample item is "Working conditions make it difficult for women in high-tech". Two of the items were positively worded and therefore were reversed to maintain consistency of the scale items.

Gendered representation in the media. Respondents were asked to agree or disagree with two statements suggesting that high-tech was represented (a) mostly by men or (b) mostly by women in each of two domains: (1) anchors hosting high-tech related TV and radio shows, and (2) advertisements on computer and technology related products in television, newspapers, magazines, and the internet. These items are similar to the questions used by Thomas and Allen (2006). Responses were summed across sex rather than content domain resulting in two measures: male representation and female representation.

Demographic questions and control variables. Information about age, gender, field of study, year of study, and family income were collected in the demographic section of the survey. Family income and major field of study were used as control variables in the analysis.

RESULTS

Respondents

A total of 849 students responded to the survey from different engineering and technology majors. One-quarter (n=209) were female and three-quarters (n=640) were male. The sample represented all four years in the undergraduate program although representation from first year students was comparatively low (8%). A chi-square test indicates that there were no significant gender differences in the distribution of respondents across program years.

The respondents' age ranged from 17 to 28 years (with 96% between 19 and 24 years). The mean age was 21 years. Income data, categorized using Khan's (2010) norms for Bangladesh, indicated that 18% of the respondents belonged to the low-income group, 59% of the respondents fell into the mid-income group and 23% of the respondents belonged to the high-income group.

Using Frenette's (2007) definition of high-tech related majors, we grouped the following programs under high-tech majors - computer science, computer engineering, electrical and electronics engineering, software engineering, systems engineering, information communication technology, and information systems. The non-high-tech majors were comprised of civil engineering, chemical engineering, water resource engineering, industrial engineering, and production engineering. Among the respondents, 69% were enrolled in a high-tech major and 31% were in non-high-tech majors. Both high-tech and non-high-tech groups were included in the analysis to ensure adequate variance on the dependent variable - intention to pursue a high-tech career.

Evaluation of Measures

To evaluate the measures adapted for this study, factor analysis was conducted on the multi-item scales. Principal axis factoring with varimax rotation was used and only factors with eigenvalues greater than 1 were retained. Items with factor loadings below 0.4 were excluded. Items with significant loadings on a factor were summed to create the final scale. Cronbach's alpha was calculated to assess the reliability of multi-item scales.

Results for the factor analysis of the perceived job attribute scales are shown in Table 2. Three factors were extracted which represent financial rewards, prestige and challenge as expected. These three factors accounted for 42.3% of the variance. All three factors have scale reliabilities greater than Nunnally's (1978) 0.60 lower limit for reliability for newly developed scales.

Factor analytic results for perceived male dominance in high-tech are reported in Table 3. The analysis extracted two factors indicating that these five items do not form a unidimensional scale. The two factors, which accounted for 58.1% of the variance, reflect the suitability of high-tech careers for women and women's treatment in high-tech jobs. The Cronbach's alpha for women treated unfairly is 0.83. Perceptions that high-tech is unsuitable for women included two items hence Cronbach's alpha was not calculated. Subsequent analysis used both dimensions.

Table 2. Factor Analysis - Perceived Job Attributes

Perceived job attributes	Factor 1 "Financially Rewarding"	Factor 2 "Prestigious"	Factor 3 "Challenging"
High paying career	0.66		
Provides economic security	0.87		
Offers employment stability	0.46		
Offers potential to earn high incomes	0.41		
I see high-tech as a prestigious career		0.55	
I really respect professionals who work in high-tech		0.47	
People who work in high-tech are respected in society		0.54	
In high-tech, you need to upgrade skills continuously			0.43
Exciting and creative career			0.62
Dull and boring career (reverse-scored)			0.71
Percent Variance Accounted for by each Factor	0.31	0.07	0.04
Cronbach's Alpha for Scale	0.74	0.71	0.64

Note: Factors with an Eigenvalue greater than one were included. Only significant factor loadings (.4 or above) are shown.

Table 3. Factor Analysis - Perceived Male Dominance

Perceived male dominance in the high-tech sector	Factor 1 "Women Treated Unfairly"	Factor 2 "Unsuitable for Women"
Women can be very successful in high-tech [reversed]		-0.83
High-tech is a suitable job for women [reversed]		-0.85
Working conditions make it difficult for women in high-tech	0.60	
Male high-tech professionals get promoted more quickly	0.80	
Male high-tech professionals earn more	0.69	
Percent Variance Accounted for by each Factor	0.39	0.19
Cronbach's Alpha for Scale	0.83	n/a

Note: Factors with an Eigenvalue greater than one were included. Only significant factor loadings (.4 or above) are shown.

The items measuring gendered representation in the media were intended to assess different domains and different gender mixes. As these items were not intended to represent the same construct and thus form a formative indicator rather than a reflective one, factor analysis and Cronbach's alpha were not utilized.

Analysis

Between women and men, three distinct types of group differences can be examined. First, there may be differences in the mean levels of the variables that can be examined using t-tests. For example, if we try to understand the relationship between experience and promotion, the t-test results may indicate that women may have more experience than men, but this does not tell us whether the relationship between experience and promotion is the same for both genders. Second, there may be differences in the degree of relationship between the two variables. Degree of relationship can be examined by testing for differences in correlation coefficients between groups (Arnold, 1982). For example, the relationship between experience and promotion can be positively related for men but not for women. And third, differences may exist in the forms of the relationship between the two variables, that is, differential validity of the predictors. Differences in the form of relationship are generally tested using interactions in hierarchical multiple regression (Arnold, 1982). For example, experience might explain more of the variance in promotion for men than for women. To test our hypotheses and to understand the differences between women and men, we employed all three analyses – differences in the means, differences in the degree of relationship, and differences in the form of the relationships.

Results

In the first step of the analysis, we examined the means for all the variables separately for women and men and tested for differences in means using t-tests. The results are presented in Table 4. These results show that, on average, the female students came from families with higher incomes and viewed high-tech as a more prestigious career. Men were more likely to believe that high-tech is not suitable for women and to perceive that the media representation of high-tech is predominantly male.

Table 4. Gender Differences in Means using T-Test

Variables	Men (Means)	Women (Means)	Significance (2 tailed)
Interest in pursuing high-tech career	3.96	3.91	0.49
Adjusted family income (in thousands) *	323.41	403.98	0.01
High-tech related major	0.71	0.66	0.21
Financially rewarding	3.97	3.94	0.60
Prestigious*	4.13	4.24	0.03
Challenging	4.30	4.35	0.37
Not suitable for women**	2.74	2.06	0.00
Women treated unfairly	3.08	3.00	0.29
Media representation female	2.95	3.01	0.38
Media representation male*	3.12	2.92	0.00

Note: * $p < 0.05$; ** $p < 0.01$

Since our hypotheses suggest that sex modifies the relationship between perceptions and career intentions, we examined the correlations between the dependent and independent variables separately for women (Table 5) and men (Table 6). The correlations illustrate that intention to pursue a high-tech career is significantly and positively related to two job attributes - prestige and challenge for women and to all three job attributes – financial rewards, prestige and challenge for men. Both women and men were less likely to pursue a high-tech career when they perceived that high-tech careers are not suitable for women. Perceptions that women are treated unfairly in the high-tech sector were not correlated with career intentions for either women or men. Gendered representation of high-tech in the media did not influence women’s intentions, but men who perceived more male representation in the media were more likely to pursue a career in this area.

To test the joint effect of these predictors, two sets of hierarchical multiple regression analyses were conducted – one each for women and men (see Table 7). Students’ family income and major field of study (high-tech related or not) were entered in Step 1 as control variables. Step 2 introduced the job attributes and Steps 3 and 4 added the variables related to the gendering of the profession, including perceived male dominance in the high-tech sector and the gendered representation of the media, respectively.

The regression analysis for women undergraduate students in this study indicates that the control variables (family income and field of study) did not contribute significantly to the variance in intention to pursue a high-tech career. Job attributes (Step 2) accounted for 13% of the variance in career intentions but challenge is the only one that made a significant contribution to the regression. Thus, *Hypothesis 1a* that challenge has a greater impact on women than prestige or financial rewards is supported. Perceived male dominance in the high-tech sector (Step 3) accounted for an additional 4% of the variance in career intentions. The results provide partial support for *Hypothesis 2a* which suggests that female students’ perceptions of male dominance in high-tech is negatively related to high-tech career intentions. Specifically, the regression analysis indicates that career intentions are negatively related to perceptions that high-tech is not a suitable career for women. Inequitable treatment of women in high-tech did not, however, have a significant impact on career intentions. Female students’ perceptions of gendered representation of high-tech in the media also did not contribute significantly to their intention to pursue a career in the high-tech field, thus indicating no support for *Hypothesis 3a*. Overall, 19% of the variance in high-tech career intentions is explained by the two significant predictors. In the final model, the significant predictors of women’s career intentions are, in order of importance, perceptions of high-tech as a challenging career ($\beta = 0.28$) and high-tech’s suitability for women ($\beta = -0.17$).

The regression results for male undergraduate students in this study indicates that pursuing a high-tech undergraduate major has a significant effect on career intentions; the control variables explained 2% of variance. Next, job attributes (Step 2) accounted for 24% variance. According to *Hypothesis 1b*, financial rewards and prestige would have greater positive impact on men’s career intentions than

Table 5. Means, standard deviations and correlations for women respondents

Variables	M	SD	1	2	3	4	5	6	7	8	9
(1) Int to pursue HT career	3.91	.84	-	-	-	-	-	-	-	-	-
(2) Adjusted income (in 000)	403.98	374.22	-0.74	-	-	-	-	-	-	-	-
(3) High-tech related major	0.66	0.46	0.02	0.06	-	-	-	-	-	-	-
(4) Financially rewarding	3.94	0.64	0.13	0.03	-0.03	-	-	-	-	-	-
(5) Prestigious	4.24	0.57	0.24**	-0.12	-0.21**	0.42**	-	-	-	-	-
(6) Challenging	4.35	0.61	0.36**	-0.16*	-0.05	0.31**	-0.41**	-	-	-	-
(7) Not suitable for women	2.06	0.72	-0.30**	-0.10	-0.07	-0.28**	-0.29**	-0.28**	-	-	-
(8) Women treated unfairly	3.00	0.99	-0.12	-0.18*	0.05	0.10	0.15*	-0.04	0.20**	-	-
(9) Media rep male	3.01	0.87	0.12	-0.11	0.16*	-0.03	0.13	0.03	-0.04	0.17*	-
(10) Media rep female	2.92	0.88	0.02	0.07	0.16*	0.12	0.03	-0.17*	-0.10	0.20**	-0.00

Note: M = mean and SD = standard deviation. Sample size is 156 for adjusted income. Two-tailed significance * $p < 0.05$; ** $p < .01$.

Table 6. Means, standard deviations and correlations for men respondents

Variables	M	SD	1	2	3	4	5	6	7	8	9
(1) Int to pursue HT career	3.96	0.91	-	-	-	-	-	-	-	-	-
(2) Adjusted income (in 000)	323.41	273.28	-0.06	-	-	-	-	-	-	-	-
(3) High-tech related major	0.71	0.46	0.11**	0.14**	-	-	-	-	-	-	-
(4) Financially rewarding	3.97	0.64	0.33**	-0.08	-0.02	-	-	-	-	-	-
(5) Prestigious	4.13	0.64	0.34**	-0.03	0.07	0.60**	-	-	-	-	-
(6) Challenging	4.30	0.67	0.48**	0.02	0.12**	0.39**	0.51**	-	-	-	-
(7) Not suitable for women	2.74	1.02	-0.11**	0.00	-0.09*	-0.15**	-0.21**	-	-	-	-
(8) Women treated unfairly	3.08	0.92	0.02	-0.08	-0.11**	0.19**	0.07	0.10*	-0.05	0.30**	-
(9) Media rep male	2.95	0.86	0.13**	-0.10*	-0.07	0.18**	0.16**	0.02	-0.13**	0.21**	-
(10) Media rep female	3.12	0.83	0.00	-0.01	-0.06	0.10*	0.10**	-0.06	-0.13**	0.25**	-0.09*

Note: M = mean and SD = standard deviation. Sample size is 535 for adjusted income. Two-tailed significance * $p < 0.05$; ** $p < .01$.

Table 7. Hierarchical Regression Results

Step and Statistic	Women (β)	Men (β)
Step 1 R ² model	0.01	0.02**
Step 1 β Family Income	-0.07	-0.07
Step 1 β Major of Study	0.02	0.12**
Step 2 R ² model	0.14***	0.26***
Step 2 β Family Income	-0.01	-0.06
Step 2 β Major of Study	0.06	0.07*
Step 2 β Financially rewarding	-0.02	0.14***
Step 2 β Prestigious	0.13	0.05
Step 2 β Challenging	0.31***	0.39***
Step 2 ΔR^2	0.13***	0.24***
Step 3 R ² model	0.18***	0.26***
Step 3 β Family Income	-0.05	-0.06
Step 3 β Major of Study	0.05	0.07
Step 3 β Financially rewarding	-0.04	0.13**
Step 3 β Prestigious	0.11	0.04
Step 3 β Challenging	0.26***	0.39***
Step 3 β not suitable for women	-0.19*	-0.05
Step 3 β women treated unfairly	-0.09	0.03
Step 3 ΔR^2	0.04**	0.00
Step 4 R ² model	0.19***	0.27***
Step 4 β Family Income	-0.05	-0.56
Step 4 β Major of Study	0.02	0.07*
Step 4 β Financially rewarding	-0.04	0.13**
Step 4 β Prestigious	0.09	0.02
Step 4 β Challenging	0.28***	0.40***
Step 4 β not suitable for women	-0.17*	-0.03
Step 4 β women treated unfairly	-0.12	0.00
Step 4 β Media representation male	0.11	0.09*
Step 4 β Media representation female	0.08	0.02
Step 4 ΔR^2	0.01	0.01*

Note: Standardized regression weights (β) are reported. * $p < .05$; ** $p < .01$; *** $p < .001$.

challenge; however, this is not the case. Results indicate challenge and financial rewards have greater positive impact on men's career intentions and challenge is found to be a stronger predictor than financial rewards. Prestige did not have a significant effect on men's career intentions. *Hypothesis 2b* is supported as perceived male dominance in the high-tech sector (Step 3) is not a significant predictor of men's career intentions. *Hypothesis 3b* is also supported; media's gendered representation of the high-tech sector (Step 4) is significant and explained 1% variance in men's career intentions. That is, male students' who perceived the media images of high-tech to be predominantly male are more likely to plan to pursue a high-tech career. Overall, 27% of the variance in the career intentions of men is explained by the four significant predictors. In the final model, the significant predictors of men's career intentions are, in order of importance, challenge ($\beta = 0.40$), financial rewards ($\beta = 0.13$), male media representation ($\beta = 0.09$), and major of study ($\beta = 0.07$).

DISCUSSION

The aim of the current study is to identify the extent to which perceived job attributes, perceived male dominance in the high-tech sector, and perceptions of the gendering of high-tech related media could predict undergraduate engineering students' interest in pursuing a career in the high-tech sector. Further, we were interested in exploring whether these perceived factors play a role in women and men engineering students' career intentions in Bangladesh.

Hierarchical regressions results indicate that pursuing a high-tech major in their undergraduate studies has an influence on men's careers but not on women's. A possible explanation lies in the socio-cultural structure of the country. In the traditional, patriarchal society of Bangladesh, men are still viewed as the breadwinner and thus for many men students, there is normative pressure to pursue majors that can ensure higher paying jobs and better career opportunities. Conversely, for many women students, pursuing an engineering degree could be a means to enhance symbolic capital and status which could then lead to a more qualified bridegroom in an arranged marriage market (Raghunath, 2007). The cultural norms and expectations that a "woman should not work as she will be provided for" (Pio & Syed, 2013: p. 142), may intersect with women's career intentions and therefore the major they pursue in tertiary education may not influence their career choices. Pio and Syed (2013) have also noted that in countries like Bangladesh, India, and Pakistan, women's participation in the labour force is low in urban areas and more years of schooling decreases the probability of female participation. Future research examining the interplay of education, location, social class, and career choice is needed to understand this phenomenon.

Both women and men students in this study strongly agreed that high-tech is a challenging and creative career and this perception played a significant role in predicting their interest in tech careers. Our findings lend support to Gokuldas (2010) claim that engineering students are more influenced by intrinsic factors when choosing a career. The extrinsic factor of high-tech careers being prestigious

did not play a role in either women's or men's interest; however, financial rewards did play a role in men's intentions. Bangladeshi men are primarily placed in the role of breadwinner (Rao, 2012) and there is pressure to take on economic responsibility for the family. This responsibility may cause men to find the prospects of financial reward more compelling compared to their female counterparts. The female students' perception that high-tech is *challenging and creative* stands at odds with previous research conducted in Western contexts that suggests women students perceive high-tech as boring (Miller, Neathey, Pollard, & Hill, 2004; Thomas & Allen, 2006), nerdy (von Hellen et al., 2000), or geeky (Presscott & Bogg, 2013).

Adya and Kaiser (2005) in their conceptual paper proposed that perceived respect and prestige were key reasons students choose to pursue a career in the tech sector in India. We proposed that a similar pattern could be observed in Bangladesh. To our knowledge, this is the first study to test this proposition empirically in a South Asian context. Contrary to our expectations, perceived prestige and respect for the high-tech profession did not play a significant role in students' career intentions when examined in conjunction with other predictors. One possible explanation is that in Bangladesh, getting admission into tech related engineering majors is already considered prestigious. Students who want to pursue engineering majors must undertake a centralized admission test. A merit list is generated based on student's admission test scores, grade 12 GPA, and grade 10 GPA. Because of the competitive nature of the admission system only the best and brightest make it to the top of the merit list (Saifuddin, Dyke, & Rasouli, 2011). These top ranked students get the opportunity to choose their major and typically they choose high-in-demand majors such as computer science and engineering (CSE) and electrical and electronic engineering (EEE). As students in this study were already pursuing majors perceived as prestigious, their career intentions may be influenced by factors other than prestige. Future research should explore and identify factors that may play a role in influencing students' career intentions.

Male dominance in high-tech was examined using two measures – viewing high-tech careers as unsuitable for women and perceptions that women are treated unfairly in high-tech sector. The perception that high-tech careers are unsuitable for women has a dampening effect on women's career intentions but not on men's career intentions. It should be noted that women and men had different perceptions of high-tech's suitability for women. Male respondents perceived high-tech profession as less suitable for women than did female respondents. This suggests that some men may have entrenched notions about women's roles in society, and therefore see women as unfit for technology careers (Ali, 2012). This observation is consistent with social role theory (Eagly et al., 2000) which argues that social roles place women in occupations that require communal skills and men in occupations that require agentic skills. This perception amongst some male students may reinforce gender stereotypes about the profession and discourage female students from pursuing a career in the high-tech sector (Küskü et al., 2007).

Perceptions that women are treated unfairly in the high-tech sector are not a significant predictor of career intentions in this study. One possible reason for this

finding could be that since students have not yet worked in the field, they may not be aware of any gender bias. This bias may become more relevant, however, as they progress in their careers and experience gendered dynamics at the workplace – particularly when women are married and have family responsibilities (Saifuddin et al., 2019; Srinivasan et al., 2013). Further research on this issue is warranted.

Our results indicate the gendering of occupations in the media can affect career choices – specifically for male respondents in this study. Male students are more interested in pursuing high-tech careers when there is greater representation of male anchors in high-tech reporting and male models in high-tech product and service commercials. Media representation did not seem to affect women's career intentions although, interestingly, women were significantly less likely than men to report that the media representation of high-tech was predominantly male. This finding may reflect different media choices amongst women and men or different patterns of attention or recall for similar media presentations. Alternatively, women engineering students in this study may have more confidence and so are less affected by media representation. Another explanation may be that these women are fueled by the challenge and creativity of high-tech work and thus are uninfluenced by the media portrayal. Future research exploring these phenomena in more depth may prove valuable in understanding how media can influence career choices.

Overall, the results suggest that women and men at the career entry stage are similarly influenced by their perceptions of some job attributes – both women and men were attracted to high-tech when they viewed it as a challenging career. Men, however, were also drawn to a high-tech career because it was financially rewarding, while women were not affected by financial rewards. Although they were influenced by different types of gendered norms – women by attitudes toward the suitability of high-tech careers for women, and men by male media images of high-tech – gender role stereotypes influenced the career intentions of both women and men. The results indicate that stereotypes of high-tech as a male domain, for some women and men, may influence their choices to pursue a high-tech career.

The results of this study raise many interesting questions that may provide fruitful avenues for future research. For instance, why does pursuing a high-tech major as a field of study have an influence on men's careers but not on women's? The gendering of careers (as measured by male dominance and media representation) had a stronger effect on women (total of 4% variance explained) than men (1% variance explained). It would be interesting to know if comparable dynamics hold for men in female-dominated careers such as nursing or teaching. The factors included in our model were a better predictor of the career choices of men than those of women. The results from the present study, along with the decoupling of education and career, and the significant impact of gender stereotypes, suggest there is a need for new conceptualizations of how women make career choices. Pio and Syed (2013) reported that except for Bhutan, there is a negative relationship between education and labour force participation amongst women especially in urban areas in the South Asian countries of Bangladesh, India, Maldives, Nepal, Pakistan, and Sri-Lanka. The authors argued that highly educated women will be

married into wealthier families where they will be provided for and can therefore choose not to pursue a career (Pio & Syed, 2013). Future research should explore the role of social class in career choices given that the female students in this sample came from families with higher than average incomes.

Another possible explanation for more men pursuing high-tech careers after tech education compared to women can be due to the gendered social roles (Eagly et al., 2000). Gendered social roles are entrenched in Bangladeshi society, where women are expected to assume the role of homemaker and men are expected to assume the role of breadwinner (Rao, 2012). It is possible that a high-tech career may result in higher social status through higher salaries and international travel, and give access to migration opportunities (Raghunath, 2007; Srinivasan, Murty, & Nakra, 2013). Thus, easing the way to play the breadwinner role and thereby attracting more men to such career pursuits. Gendered social role and tech employment can vary significantly between countries (Prescott & Bogg, 2013) and therefore future research in South Asian context like Bangladesh can add to scholarship by investigating the influence of gendered social role on career expectation and choices using determinants such as social status, international travel, and migration opportunities.

There are a number of limitations that should be kept in mind in interpreting these results. First, we used newly developed scales in the current study that have not been previously validated. Nevertheless, the factor analysis results are promising and suggest that these scales could be useful in future research. Second, although research on the theory of planned behaviour (Ajzen, 1991) supports a strong link between intentions and behaviour, this study did not test the relationship between students' career intentions and actual entry into high-tech work. Longitudinal studies would allow for a stronger test of the impact of the model variables on career entry. Third, we examined sex – the biological dimension of gender and did not include the psycho-social dimension of gender - gender role. Gender-role is constructed along the continuum of masculinity and femininity (Spence & Helmreich, 1978). We chose to focus on sex because our goal was to contribute to the research and policy debates regarding the under-representation of women (i.e. the sex distribution) in the tech sector rather than how having a feminine or masculine personality determines career choices. To fully understand gender differences in career choices, we need to examine the influence of both sex and gender role. Gender role often exhibits higher correlations with gendered behavior than does sex (e.g. Aylor & Dainton, 2004; Soechting, Skoe, & Marcia, 1994). For example, women with masculine gender role are likely to pursue non-traditional careers while women with feminine role are more likely to pursue traditional careers (Prescott and Bogg, 2013). Fourth, we did not consider individual factors such as self-efficacy, expectations, interest, and personality (Lent et al., 1994; 2000). Our goal was to understand how factors situated in a South Asian context with predominantly Eastern cultural values influence career choices for women and men, therefore, we focused on social factors. Future studies, however, may investigate the role of individual factors in understanding the motivation behind women's intentions to pursue a high-tech career that is situated in a male-dominated culture. This could help to shed more light on the profile of women pursuing technology careers. Finally, we recommend caution in generalizing our results. We

believe that culture and context play a significant role in shaping the dynamics of career choice. To fully understand the dynamics of context and culture on career choices in the global high-tech sector, many more studies across different cultural contexts and countries are needed.

Our study attempted to measure perceptions regarding job attributes, male dominance, gendered representation of high-tech in the media and its influence on women's and men's interest in choosing high-tech as a career. We developed and tested scales that can serve as reference points for future research in South Asian contexts. From a practical standpoint, the findings indicate that the gendering of the profession impacts women's career choices from an early career stage in Bangladesh. Thus, interventions and policies addressing gender diversity early in the career choice process may help to increase women's participation in high-tech sector.

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