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# Gender Differences in Entrepreneurial Intentions

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## **Abstract**

Although women received more opportunities and freedom to become successful in entrepreneurship over the years, entrepreneurs are still predominantly men. There is still an intractable gender gap in entrepreneurial positions. This report focuses on gender differences in entrepreneurial intentions and possible variables influencing an individual's decision to realize them. The research question is stated as follow: "Do psychological factors and factors such as the perception of masculinity and cultural norms influence entrepreneurial intentions and do they differ between genders?"

A cross-sectional study was conducted using an online questionnaire. A correlational research design determined the relationship between assertiveness, risk-taking, status-seeking, masculinity contest culture and entrepreneurial intentions and whether these constructs vary across genders. The sample consists of 111 students from the University of Twente aged 18 to 31 years. 78.4% of the participants were female, 21.6% were male. In addition, 80.2% of the participants were Dutch/German, 19.8% had a different nationality.

The data analysis consists of descriptive statistics of the sample and the measured constructs and a calculation of the participant's intentions to create a new firm. The t-test for the measured constructs indicate no significant gender differences. The correlational analysis and a linear regression analysis illustrate that status-seeking and risk-taking significantly predict entrepreneurial intentions.

Concluding it can be stated that status-seeking and risk-taking do have an influence on an individual's decision to realize entrepreneurial intentions. Gender differences were not found. It would be interesting to study further attitudes, about perceived subjective norms and underlying intentions to determine the effects of these variables on women's entrepreneurship. For future research, the sample should examine a heterogeneous sample involving other variables such as nationality or academic status.

Keywords: Assertiveness, Entrepreneurship, Entrepreneurial intentions, Gender Differences, Perceived Masculinity, Risk-Taking, Status-Seeking, Theory of Planned Behaviour

# 1. Introduction

Gender differences appear to be a problem in different areas of life, including in entrepreneurial intentions. Entrepreneurial intentions vary across men and women from different nations and cultures (Krueger, 2007; Wilson, Kickul, Marlino, Barbosa, & Griffiths, 2009). Furthermore, there is an association of female entrepreneurship intentions and gender role beliefs regarding family and work, such as marriage and childbearing decisions. Women perceiving those gender role beliefs as appropriate tend to let go of their entrepreneurship intentions since they accept to work less to instead focus on their own family (Minniti & Naude, 2010). Since the early 1990s, research on female entrepreneurship intentions has also focused on the individual characteristics of women (Busch, 1992).

Women are underrepresented in entrepreneur professions and factors for this gender inequality have been researched (Cardella, Hernandez-Sanchez & Sanchez-Garcia, 2020). Different reasons explaining the gender gap in entrepreneur professions are sexism in the workplace (Glick, 2013), the perception of women being less capable than men to become an entrepreneur, women not having required traits such as being dominant to become an entrepreneur and a woman's responsibilities she might have for managing her household and childcare (Gupta et al., 2009).

The gap between genders in entrepreneurial roles is beginning to break (Dreher, 2003). Still, the gap between genders in entrepreneurship worldwide is still significant (Vinnicombe, 2000). Data collected in the Netherlands shows a distribution of entrepreneurs in 2019 of approximately 37% female and 63% male entrepreneurs. Data from 2009 to 2019 implies that the gender distribution remained stable during that period (Statista, 2020). The male/female balance of becoming an entrepreneur in Germany is similar to the ratio in the Netherlands. The distribution in Germany is calculated as 30% female and 70% male entrepreneurs (Global Entrepreneurship Monitor, 2020). This research focuses on gender differences and female entrepreneurship in the Netherlands and Germany to examine whether specific personality traits influence an individual's aim to realize entrepreneurial intentions. It will also investigate whether perceiving entrepreneurship as a masculinity contest culture affects an individual to become an entrepreneur. The novelty of this research is including masculinity contest culture which might explain the gender gap in entrepreneurial intentions.

## 1.1. Entrepreneurial Intentions

*Entrepreneurial intention* is defined as “the conscious state of mind that precedes action and directs attention toward entrepreneurial behaviours such as starting a new business and becoming an entrepreneur” (Moriano, Gorgievski, Laguna, et al., 2012, p. 165).

According to Peng, Lu, and Kang (2012), an individual's intention to become an entrepreneur is an essential variable predicting entrepreneurial behaviours.

Men, different than women, have stronger intentions to become entrepreneurs (de Bruin, Brush, & Welter, 2006; Diaz-Garcia & Jimenez-Moreno, 2010). Although the number of women in entrepreneur positions increased drastically over the past years, the relationship between men and women working in entrepreneur positions is still 2:1 (De Bruin, Brush, & Welter, 2006). The studies of women's entrepreneurship intentions are becoming more prevalent, and research aims to understand different factors which might inhibit women from starting their entrepreneurship.

Entrepreneurial intentions vary across gender based on the fact that men do show higher intentions to realize their entrepreneurial intentions compared to women (Gupta et al., 2009; Zhao et al., 2005). Shinner, Giacomini and Janssen (2011) found that the wish to become an entrepreneur is not stable across gender or culture.

Perceived barriers might play an essential role in decreasing women's intentions to perform entrepreneurial intentions. There is evidence for an existing gap between men and women realizing entrepreneurial intentions without investing possible causes for it. A study by Linan (2009) describes the impact of perceived skill on factors motivating individuals to perform entrepreneurial intentions and found that skill perceptions have a very significant effect over the three motivational constructs (personal, attraction, subjective norm, and perceived behavioural control).

The theory of planned behaviour is often used in studies examining entrepreneurial intentions (e.g. Diaz-Garcia & Jimenez-Moreno, 2010). This theory constitutes of three cognitive variables: personal attraction, subjective norm and perceived behavioural control, which shape an individual's behavioural intentions (Ajzen, 1991). "Subjective norm" can be defined as the cognitive variable referring to social pressure an individual might receive or perceive when performing certain behaviours. "Perceived behavioural control" can be defined as how easy or difficult an individual perceives himself performing certain behaviours, such as entrepreneurial actions. The third construct, "personal attraction", can be defined as the attitude towards entrepreneurial intentions, so the degree to which an individual is engaged and willing to sacrifice to become an entrepreneur (Liao & Welsch, 2004; Kolvereid & Isaken, 2006). So, the theory of planned behaviour predicts that the greater the personal attitude and subjective norm connected to a strong perceived behavioural control is, the greater the intention to perform that particular behaviour becomes (Diaz-Garcia & Jimenez-Moreno, 2009).

There is criticism about the theory of planned behaviour. According to Ajzen's theory (1991), individuals make decisions relying on rational thoughts. Researchers argue, that human and individual behaviour is complex and is thus not relying on elaborative thoughts (Eagly & Chaiken, 1993; McCleery, 2009). By using rational thoughts as the variable in making decisions, the role of emotions, individual perceptions or other variables influencing individual behaviours are being ignored (Jacobs, Vaske, Dubois, & Fehres, 2014; Manfredo, 2008). Another common point of criticism is, that the relationship between intentions and behaviour is sometimes weak (Davis et al., 2008). Still, research has shown that using the theory of planned behaviour helps to predict behaviour in certain domains such as of environmental behaviour (e.g. Kaiser & Gutscher, 2003; Taylor & Todd, 1997).

## **1.2. Individual-Level Psychological Factors**

Entrepreneurial attitudes, such as confidence, can predict realizing entrepreneurial intentions (Anderson et al., 2009; Athayde, 2009). Ho and Koh (1992) argued that confidence is required to become an entrepreneur. Ferreira et al. (2012) found that entrepreneurs are higher in their general self-confidence than non-entrepreneurs. The findings about entrepreneurs being higher in confidence can be a possible explanation for the gender gap based on the findings of Shinner et al. (2012) who found that women generally have a higher fear of failure and feel less competent than men in terms of becoming a successful entrepreneur. So, they are less confident about their competences.

These findings are based on the results of data collected in the United States and Belgium by Shinner et al. (2012). Furthermore, their findings suggest that women's perceived lack of competency negatively correlates with entrepreneurial intentions, which has not been proven when comparing men's perceived lack of competency with entrepreneurial intentions. Thus, other factors might explain men's intention to realize entrepreneurial intentions. So, this study will focus on researching if specific personality traits enhance an individual's entrepreneurial intentions.

In this report, the relationship between personality traits and their influence on realizing entrepreneurial intentions will be examined. The traits chosen for this study are assertiveness, status-seeking, masculinity and risk-taking. Further, it will be examined whether men score higher in these constructs compared to women.

### **1.2.1. Assertiveness**

Assertiveness can be defined as a skill comprising of being able to communicate with others effectively and persuading others while being respectful without using aggressivity. Individuals being high in assertiveness are not afraid of sharing their ideas, goals

or points of view (Fornell, & Westbrook, 1979). Through exercises or made experiences, assertiveness can be improved. As an entrepreneur, being assertive is a trait that appears to be commonly helpful. Findings indicate that an effective entrepreneur should possess or aim to enhance personality traits belonging to extraversion or openness. Traits such as assertiveness have been already found to influence an entrepreneur's successes (Kaur, & Bains, 2013). Various researchers conclude that assertiveness is one crucial trait of entrepreneurs that can hugely impact their firms' successes (Hollandsworth, 1977).

Gender has an influence on the level of assertiveness an individual has. Studies conducted by Costa et al. (2001) or Feingold (1994) found that men are higher in assertiveness than women. Women are associated with traits such as helping others, maintaining relationships and being more warm-hearted, whereas men are typically associated with being higher in assertiveness or competitiveness (Roxas, & Stoneback 2004; Eagly 1987). Also, women are perceived as more unselfish, empathetic and sensitive whereas the perception of men involves being assertive, competitive and independent (Meyers-Levy, & Loken, 2015; Rudman et al., 2012; Rudman, & Glick, 2001). Feingold (1994) found that men tend to have higher levels of assertiveness compared to women. Bossuyt and Van Kenhove (2018) concluded that women being high in assertiveness have to face more external pressure.

In this study, the relationship between assertiveness and entrepreneurial intentions will be analyzed. The assumptions are, that the relationship between assertiveness and entrepreneurial intentions is positive and that men and women score different in assertiveness, therefore, the following hypotheses are stated:

**Hypothesis 1a:** Assertiveness is positively associated with entrepreneurial intentions.

**Hypothesis 1b:** Men score higher in assertiveness than women.

### **1.2.2. Status-Seeking**

Status-seeking can be defined as: „the desire to increase one's rank in the social hierarchy and thereby to gain prestige“ (Delhey, Schneickert, Hess, & Aplowski, 2021, p. 29). Being an entrepreneur can lead to a lot of rewards. Individuals can earn power and money which are factors increasing an individual's satisfaction while seeking status (Gatewood, Carter, Greene, & Hart, 2009). Individuals perceived as high in status are associated with higher competence whereas individuals behaving more cooperative instead of competitive are perceived as warmer (Fiske, 2007).

For the level of status-seeking, individual differences are reported for gender (Huberman et al., 2004). A study by Delhey et al. (2021) found, that gender and age

significantly impact the level of status-seeking. Women and elderly are less inclined to seek status compared to men and younger individuals (Delhey et al., 2021). This can be explained by evolutionary theories claiming that status plays an important role in gender socialization (Buss, 2005). Gender socialization includes the basic human motivator helping individuals to survive and reproduce. It has been researched that seeking status is crucial for men and increases their opportunities for reproduction (Buss, 2005). Feingold (1992) states that women tend to prefer high-status men as their mates. Gender difference research in traits such as status-seeking incline that men are socialized to be more aggressive and reliant whereas women tend to show more obedience and restraint (Low, 1989).

In this study, the relationship between status-seeking and entrepreneurial intentions will be analyzed. Also, it will be examined whether males and females score different in status-seeking. The assumptions are, that the relationship between status-seeking and entrepreneurial intentions is positive and that men score higher in status-seeking than women, therefore, the following hypotheses are stated:

**Hypothesis 1c:** Status-seeking is positively associated with entrepreneurial intentions.

**Hypothesis 1d:** Men score higher in status-seeking than women.

### **1.2.3. Risk-Taking**

Risk-taking can be defined as: „any purposive activity that entails novelty or danger sufficient to create anxiety in most people. Risk-taking can be either physical or social.“ (Levenson, 1990, p.1). An entrepreneur has to put effort, time and money into their ideas of starting a new firm. This often involves putting oneself in financial risk to realize entrepreneurial intentions (Kozubikova, Dvorsky, Cepel, & Balcerzak, 2017). Being high in risk-taking might influence the someone’s intentions to become an entrepreneur, so this trait has also been included into this report.

Empirical research of gender differences in risk-taking leads to the assumption, that men score higher in risk-taking compared to women (e.g. Charness, & Gneezy, 2012). Empirical research of gender differences influencing economical risk-taking activities indicates that men are higher in risk-taking compared to women (Croson & Gneezy, 2009). A study conducted by Dreber et al. (2010) found large differences in men and women according to financial risk-taking.

In this study, the relationship between risk-taking and entrepreneurial intentions will be analyzed. The assumption is, that the relationship between risk-taking and entrepreneurial



intentions is positive. Also, it is hypothesized that men score higher in risk-taking than women, therefore, the following hypotheses are stated:

**Hypothesis 1e:** Risk-taking is positively associated with entrepreneurial intentions.

**Hypothesis 1f:** Men score higher in risk-taking than women.

### 1.3. Perception of Culture, Masculinity and Social Norms

The perception of culture and social norms inhibits women's entrepreneurial intentions (e.g., gender-stereotypical ideas about leadership) (Shinnar, Giacomini, & Janssen, 2012). Gender stereotypes can have a strong influence on an individual's perceptions, intentions and behaviour (Heilman, 2001). These stereotypes also influence individual's in achievement-related domains such as business (Nosek, Banaji, & Greenwald, 2002). Researches such as Gupta et al. (2005) provide evidence that classical stereotypes about gender do have an influence on an individual's decision to realize intentions to become an entrepreneur.

Bandura (1997) stated that women having strong perceptions of stereotypes associated with the classical role of women evolve self-doubts about their capabilities for non-traditional pursuits. In contrast, women who take a more neutral view towards the role of a woman show to work in more traditionally male professions. Thus, gender roles and gender orientation may influence entrepreneurial intentions.

When taking a look at gender differences in general, *differential socialization* is a word mentioned in previous research. It refers to an individual's different nurture, the upbringing and inputs males and females are experiencing (Stockard, 2006). Social scientists assumed that innate biological preferences lead to differences in behaviours, attitudes, traits and perceptions, thus the socialization variable indicates that males and females are acting differently in diverse areas of life since they have been taught to (Stockard, 2006).

According to the social feminist perspective, different intentions in entrepreneurial intentions are based on the facts that men and women perceive the world differently and how to execute entrepreneurship (Fischer et al., 1993). However, the liberal feminist perspective argues that males and females are very similar and that women's entrepreneurship intentions are hindered by not having equal access to resources as men, but instead, they have to face gender-biased discrimination and stereotypes (Popescu, 2012). Those stereotypes involve perceiving an individual's characteristics and attributes associated with common beliefs about the individual's gender. For women, for instance, common ideas shared by the majority of the society include expressiveness, connectedness, relatedness, kindness, supportiveness. Contrary, men are more associated with traits such as independence, aggressiveness,

autonomy, instrumentality and courage (Gupta et al., 2009). A study aimed at revealing which characteristics an entrepreneur should possess show that men and women named characteristics very similar to the traits associated with men (Gupta et al., 2009). Previous evidence already suggests that entrepreneurs tend to be masculine since business professions are perceived to be meant for men (Powell, Butterfield, & Parent, 2003).

However, in poorer countries but also in general, discrimination against women is suggested to be a possible obstacle women have to face when trying to become an entrepreneur. Discrimination beliefs against women are a result of gender beliefs that are different for different cultures and societies (Minniti & Naude, 2010).

Also, in Western cultures, existing research about balancing a work-family daily life has found that mothers who have to spend much time on their work and are take care of their household and children are often stressed. The typical finding is that women are spending more time on household and childcare than men who might compete with a full-time job (Galinsky, 2005). Women questioned about how they take care of their childcare, household and a full-time job in a higher position explain that they invented multitasking strategies on how to balance everything. They stated, for instance, that they took their children to work, worked from home or worked on Sunday evenings when the rest of the family members were already asleep.

Household and childcare strategies might work but are factors that may increase a woman's stress and result in conflicts (Cheung & Halpern, 2010). Research about men balancing household, childcare and their job shows that only a small number of men handle all those. Martin (2001) found evidence that some family business owners who did not have sons sold their firm instead of allowing their daughter to run the company. Martinez-Jimenez (2009) researched this subject more in-depth and found that women living in traditional countries perceived traditional women roles such as being the spouse or mother, which might have led women to believe that they are suited for the conventional role instead of becoming successful in business and entrepreneurship positions.

Essential for this research is to examine whether perceived masculinity influences an individual's decision to realize entrepreneurial intentions. Glick, Berdahl and Alonso (2018) researched masculinity contest culture. In their research, they describe that masculinity contest changes by time. While young boys showed their masculinity by presenting physical strength on playgrounds, men are proving their masculinity in their work culture. So, showing masculinity involves playing out rivals, working long and hard, earning the most and rising the highest (Glick, Berdahl, & Alonso, 2018). The theoretical background of the masculinity

contest culture involves men's desire to dominate and the avoidance of showing weakness or vulnerability (Connell & Messerschmidt, 2005).

Traditional gender roles associate men to be masculine, strong, have power and be competitive, whereas women are stronger associated with attributes such as love, affection and warmth (Fawkner, 2012). Men with a more traditional view on gender-roles report higher desires for masculinity and by achieving their desires, they feel that they achieve their gender-role expectations involving having power and control (Fawkner, 2012). Being an entrepreneur and having one's own business leads to having power and control as well, so, this report focuses as well on the question whether perceived masculinity positively correlates with entrepreneurial intentions.

The hypotheses stated based on these findings are:

**Hypothesis 2a:** There is a positive association between perceived masculinity and entrepreneurial intentions.

**Hypothesis 2b:** Men score higher in perceived masculinity than women.

## **2. Method**

### **2.1. Design and Procedure**

A cross-sectional study was conducted during November 2021 using an online questionnaire designed in Qualtrics and offered to students from the University of Twente on SONA Systems. A correlational research design assessed the whether the study's variables influence entrepreneurial intentions. Therefore, the current study sought to determine the relationship between assertiveness, risk-taking, status-seeking and entrepreneurial intentions. Furthermore, since data collection of students is easier accessible by using university programs such as SONA, a platform offering students the possibility to earn needed SONA points in exchange for filling in surveys will be used for data collection.

The survey started with a consent page including project title, purpose, procedure, participants, participant's rights, risks and benefits and confidentiality. Then, the survey included a variety of measurement tools. First, the participants were asked to fill in demographic questions. Afterward, a combination of items from the Entrepreneurial Intentions Questionnaire (Ngugi, Gakure, Waithaka, & Kiwara, 2012), International Personality Item Pool (De Vries, de Vries, & Feij, 2009), ESS Human Values Scale (Schwartz, 2006), status-seeking (Schwartz, 1992), perceived masculinity (Glick, Berdahl & Alonso, 2018) and the Organizational Collectivism Scale (He, Baruch, & Lin, 2014) were presented. In between, attention check items such as „If you are reading this, please select

„slightly disagree” were added to check if the participants were completing the survey consciously and to ensure validity of the collected data. There was approval for this research from the Ethics Committee of the University of Twente Faculty BMS for Psychology.

## **2.2. Participants**

The sample of this research consisted of students from the University of Twente (Table 1). In total, 126 responses were collected. Data of 15 participants were deleted since these participants did not pass the attention checks or did not answer all items. So, data of 111 participants were used for the data analysis.

The mean age of the participants was 21.1 years with a standard deviation of 2.7. The age of the participants ranged from 18-31 years. 78.4% of the participants were female, 21.6% were male. 80.2% of the participants were Dutch/German, whereas 19.8% had a different nationality (Table 1). The sample is composed of 77.4% psychology students and 22.6% students from different majors. Based on the analysis of the participants data, it can be concluded that the sample is homogenous (Table 1).

Table 1

*Demographic Characteristics of the Respondents (N=119)*

Variables	Frequency	%
Sex		
Male	24	21.6
Female	87	78.4
Other	0	0
Nationality		
German	63	56.8
Dutch	26	23.4
Other	22	19.8
Socio-economic status		
Very poor	2	1.8
Poor	8	7.2
Middle class	87	78.3
Wealthy	12	10.8
Very Wealthy	2	1.8
Bachelor Students	100	90.09
Master Students	10	9.01
PhD Researchers	1	0.9
Study Major		
Psychology	86	77.4
Communication Sciences	14	12.6
International Business	8	7.2
Administration		
Electrical Engineering	1	0.9
Industrial Engineering and Management		
Science	1	0.9
Creative Technology	1	0.9

## **2.3. Measurement Tools**

### **2.3.1 Demographics**

First, demographical information of the participants was collected by assessing their age, sex, nationality, position at the University of Twente, socio-economic status and study major.

### **2.3.2. Entrepreneurial Intentions**

The entrepreneurial intention questionnaire is used to measure entrepreneurial intentions. The questionnaire consists of 17 items. An example item is „Being an entrepreneur implies more advantages than disadvantages to me.“ The items can be answered with a 7-point likert scale ranging from (total disapproval/disagreement) to 7 (total approval/agreement). The Cronbach’s alpha calculated for this measurement tool is .95 which is highly reliable. The Cronbach’s alpha calculated for this measurement tool in another study is .70 and reliable as well (Moi, Adeline, & Dyana, 2011). Johnston et al. (2014) found that the items have good discriminant validity as the square roots of the average variance extracted is greater than the respective coefficients of correlation with other variables (Johnston et al., 2014).

### **2.3.3. Masculinity Contest Culture Scale**

The masculinity contest culture scale is used to measure perceived masculinity and the working place. The scale consist of 20 items and an example item is: “Admitting you don’t know the answer looks weak.” (Glick, Berdahl & Alonso, 2018). The items can be answered on a 5-point likert scale ranging from 1 (not all true of my work environment) to 7 (entirely true of my work environment). Cronbach’s alpha for this scale is calculated as .90 which is highly realiable. Cronbach’s alpha for this scale in another study is calculated as .89 (Perez-Rojas, Bartholomew, Lockard & Gonzalez, 2019). A study conducted by Glick, Berdahl and Alonso (2018) assessed the scale’s psychometric properties using an exploratory factor analysis and found adequate validity.

### **2.3.4. Status-seeking Motives**

To measure Status-seeking, 3 items have been chosen to be a part of the survey designed to classify respondents according to their basic value orientations (Schwartz, 1992). Participants are presented by statements about an individual and are asked “How much are like you is this person?”. The items are „It is important to me, to show my abilities”, “Being very successful Is important to me. I hope people will recognize my achievements.” And „It is important to me to get respect from others. I want people to do what I say“. The items are measured by a 6-point likert scale are ranging from 1 („not like me at all“) to 6 („very much

like me“) (Paskov, Gerxhani, & van de Werfhorst, 2017). The Cronbach’s alpha for the combination of the items has been calculated as .74 and is thus reliable. The Cronbach’s alpha for the combination of the three items in another study has been calculated as .71 (Paskov, Gerxhani, & van de Werfhorst, 2017). A study conducted by Choi and Burnham (2020) revealed that the overall measurement model has an acceptable model fit, average variance estimates and construct validity values of above .88, indicating suitable validity.

### **2.3.5. Trait Risk-taking**

Risk-taking has been measured by using 10 items from the International Personality Item Pool since this scale consists of over 250 scales and is often used in psychological and social fields. An example item is „Am willing to try anything once.“ (Tett & Palmer, 1997). The items are answered on a 7-point likert scale ranging from 1 (extremely unlike) to 7 (extremely likely) and have a Cronbach’s alpha of .78 which is highly reliable. In a study conducted by Tett and Palmer (1997), Cronbach’s alpha has been computed as .78 as well. Strong validity has been found by a study conducted by Grucza and Goldberg (2007).

### **2.3.6. Trait Assertiveness**

The assertiveness scale consists of 10 items. One example item is „I am someone who takes charge.“ (DeYoung, Quilty, & Peterson, 2007). The items of the survey measured on a 5-point likert scale starting from 1 (always disagree) to 5 (always agree). Cronbach’s alpha for this scale has been computed as .80 which is highly reliable. In a study conducted by DeYoung et al., (2007) Cronbach’s alpha has been computed as .83 which is highly reliable and the study resembles good internal validity of the measurement construct.

## **2.4. Data analysis**

The data obtained with the online survey was analysed by using IBM SPSS statistics 26. First, the results were analysed by descriptive statistics. Then, participant’s intentions to create a new firm have been calculated by counting up the sum of respondents answering three items of the Entrepreneurial Intentions Questionnaire (“I am determined to create a firm in the future.”, “I have very seriously thought of starting a firm.” and “I have the firm intention to start a firm someday.”) with “(strongly) agree”. Afterwards, the percentage of the respondents divided by their gender has been calculated in relation to the sum of the sample.

Afterwards, Minimum and maximum scores, means and standard deviation of the traits risk-taking, assertiveness, status-seeking, and entrepreneurial intentions were assessed, and the correlations of these traits were computed. In addressing the research hypotheses, independent t-tests were conducted to assess if individuals scoring higher in perceived masculinity, status-seeking, assertiveness, risk-taking or collectivism score higher in

entrepreneurial intentions. Finally, a linear regression analysis was conducted to assess whether status-seeking, masculinity, risk-taking, assertiveness, age and gender significantly predicted entrepreneurial intentions.

### 3. Results

Table 2 presents the participant's intentions in creating a new firm for female and male participants. The results show that 10.34% of female respondents answered the question "I am determined to create a firm in the future." with strongly (agree) whereas almost twice as much male respondents answered the question with strongly (agree) calculated as 20.82%. 12.64% of female respondents indicated that they have very seriously thoughts of starting a firm compared to male respondents, of which 25% indicated to have very seriously thoughts of starting a firm. The question: "I have the firm intention to start a firm someday" has been (strongly) agreed by 13.79% of female respondents and 12.5% of male respondents.

Table 2

*Student's intention to create a new firm (agree/strongly agree)*

	Total	(%)	Female	(%)	Male	(%)
I am determined to create a firm in the future.	14	12.61	9	10.34	5	20.82
I have very seriously thought of starting a firm.	17	15.32	11	12.64	6	25
I have the firm intention to start a firm someday.	15	13.51	12	13.79	3	12.5



### 3.1. Descriptive Statistics

Table 3

*Means, standard deviations and t-values of trait risk-taking, assertiveness, status-seeking, entrepreneurial intentions and perceive masculinity divided by gender*

Variables	N	N	Mean	SD	Mean	SD	t-value
	Female	Male	Female	Female	Male	Male	
Assertiveness	89	22	3.22	.34	3.21	.28	.04
Status-seeking	89	22	4.39	1.38	4.38	1.53	-.32
Risk-taking	89	22	4.50	.51	4.44	.33	.40
Collectivism	89	22	5.43	.90	5.42	.86	-.52
Entrepreneurial intentions	89	22	3.43	1.17	3.71	1.42	-1.09
Perceived Masculinity	89	22	2.87	.66	2.76	.71	.63

\* significant at .05 level (2-tailed)

Table 3 shows the calculated mean scores, standard deviations and the t-values of risk-taking, assertiveness, status-seeking, collectivism and entrepreneurial intentions for female and male participants. The mean scores and t-values of assertiveness, status-seeking, risk-taking, collectivism and perceived masculinity are not significantly different for men and women, whereas the mean score of entrepreneurial intentions is slightly higher for men than for women (*M male: 3.71, SD: 1.42 > M female: 3.43, SD: 1.17*). So, hypotheses 1b, 1c, 1e and 2b that men score higher in assertiveness, status-seeking, risk-taking or perceived masculinity are rejected. The t-values are not significant, confirming no significant gender differences for assertiveness, status-seeking, risk-taking or entrepreneurial intentions and thus, strengthen the rejection of hypotheses 1b, 1c, 1e and 2b.

Table 4

*Correlation table of risk-taking, status-seeking, assertiveness, entrepreneurial intentions, collectivism and gender*

	1	2	3	4	5	6	7
1. Assertiveness	1						
2. Status-seeking	.31*	1					
3. Risk-taking	.52**	.32*	1				
4. Collectivism	.29**	.17	.24	1			
5. Entrepreneurial Intentions	.22**	.48*	.27	.20	1		
6. Perceived Masculinity	.13	.01	.07	-.01	-.09*	1	
7. Gender	-.01	-.00	.06	-.01	.09	-.5	1

\*\* Correlation is significant at the .01 level (2-tailed)

\* Correlation is significant at .05 level (2-tailed)

The results in Table 4 present the correlation analysis. The results show that assertiveness, risk-taking, and status-seeking significantly impact entrepreneurial intentions ( $p < .001$ ), indicating that assertive individuals who are high in risk-taking or status-seeking have higher intentions of becoming entrepreneurs since they know what it takes to be an entrepreneur. So, hypotheses 1a, 1c and 1e are confirmed. Participants who scored higher in assertiveness, risk-taking or status-seeking scored higher in having entrepreneurial intentions.

There is a weak negative relationship between perceived masculinity and entrepreneurial intentions ( $r = -.09$ ,  $p = .33 > .05$ ), indicating no significant association that individuals scoring higher in perceived masculinity at the workplace have higher intentions to become an entrepreneur. Thus, hypothesis 2b, that there is an association between perceived masculinity and entrepreneurial intentions, can be rejected.

Table 5

*Results for Linear Regression with status-seeking, masculinity, risk-taking, assertiveness, age and gender predicting entrepreneurial intentions*

Variable	<i>B</i>	<i>SE</i>	$\beta$	<i>t</i>	<i>p</i>	<i>F</i>
(Intercept)	-.87	1.41		-.62	.54	6.23**
Status-seeking	.39	.08	.44	4.88	<.001**	
Masculinity	-.07	.17	-.04	-.41	.69	
Risk-taking	.48	.24	.19	2.02	.05**	
Assertiveness	.24	.36	.06	.67	.51	
Gender*	.31	.26	.10	1.19	.28	
Age	-.02	.04	-.04	-.49	.63	

\* Gender: Female: 1 Male 2

\*\* significant at the .05 level (2-tailed)

A linear regression analysis was conducted to assess whether status-seeking, masculinity, assertiveness, risk-taking, gender, and age significantly predicted entrepreneurial intentions. Table 6 summarizes the results of the regression model. Hypothesis 1a can be rejected since there is no significant indication that assertiveness predicts entrepreneurial intentions. Hypothesis 1c is partly confirmed since status-seeking significantly predicts entrepreneurial intentions. Hypothesis 1e is partly confirmed since risk-taking significantly predicts entrepreneurial intentions. Hypothesis 2a is rejected, perceived masculinity did not affect the participant's entrepreneurial intentions. The age or gender of the participants did not significantly predict entrepreneurial intentions either. The F-value is significant ( $p < .000 < .05$ ), thus the regression model has predictive capability.

#### 4. Discussion

The research aimed to investigate gender differences in entrepreneurial intentions and whether women possessing higher levels of traits such as risk-taking, status-seeking, assertiveness and/or masculinity have higher intentions to realize entrepreneurial intentions.

Hypothesis 1a, scoring higher in assertiveness is associated with entrepreneurial intentions, can be rejected. Based on this research, there are no significant results that being assertive influences realizing entrepreneurial intentions. Still, assertiveness is a trait that appears to be commonly helpful for an entrepreneur (Fornell, & Westbrook, 1979). So, it can

be concluded that individuals being higher in assertiveness do not have higher intentions to realize entrepreneurial intentions, but being assertive is a skill that is commonly helpful as an entrepreneur.

Hypothesis 1c, that status-seeking is associated with entrepreneurial intentions, can be confirmed. Not enough research about the influence of status-seeking on entrepreneurial intentions exists. Still, from previous research is known, that economists stated: "It is not wealth per se that is wanted; rather wealth (in the sense of relative wealth) is valued because it gives access to non-market goods such as status and influence." (Van Long, & Shimomura, 2002, p.1). Vang Long and Shomomura (2002) concluded in their research that status seekers do care about their relative wealth and relative wealth is a strong enough motivator, also individuals facing more obstacles realizing their intentions are willed to sacrifice more to build up wealth, which can be done by realizing entrepreneurial intentions.

Hypothesis 1e, scoring higher in risk-taking is associated with entrepreneurial intentions, can be confirmed. Results of the regression analysis show that risk-taking does significantly predict entrepreneurial intentions. Realizing entrepreneurial intentions is risky and involves putting effort, time and money into the idea of starting a new firm. This often involves putting oneself at financial risk to realize entrepreneurial intentions (Vereshchagina & Hopenhayn, 2009; Kozubikova, Dvorsky, Cepel, & Balcerzak, 2017). Vereshchagina and Hopenhayn (2009) researched reasons of entrepreneurs might being eager to undertake risky activities. They are reasoning that these individuals might be overoptimistic, strive to become their own boss, or are higher in risk-taking than the rest of the population. That entrepreneurs are higher in risk-taking has been for instance explored by Cressy (2000) and Polkovnichenko (2003). Similar findings were recently found based on a study conducted by Mujahid, Mubarik, & Naghavi (2020) that researched personality traits and how they impact the decision of realizing entrepreneurial intentions of business students in Pakistan. Their findings include that factors such as attitude, being innovative and high risk-taking significantly affect entrepreneurial intentions.

Hypotheses 1c and 1e can be explained by the theory of planned behaviour or the social-cognitive theory (Ajzen, 1991; Bandura, 1991). Both theories argue that variables such as personality traits can influence specific intentions (Travis & Freeman, 2017). Furthermore, both theories claim that narrow personality traits should be variables predicting specific characteristics such as intentions to create a firm. The entrepreneurial event model by Shapiro and Sokol (1982) can strengthen this suggestion which claims that traits are proximal and direct causes leading to realizing entrepreneurial intentions.

Another explanation for risk-taking influencing the decision to realize entrepreneurial intentions is a study conducted by Vermeer et al. (2020). This study investigated the role of testosterone in influencing an individual's traits such as risk-taking or status-seeking. Testosterone is the primary sex hormone in males and is not only associated with biological characteristics, but also with behaviours leading to status-seeking, such as competition (Eisenegger, Huashofer, & Fehr, 2011). A general belief is that testosterone leads to less risk aversion, including competitive behaviours (Vermeer et al., 2020). Vermeer et al. (2020) formulated based on previous models on the research of testosterone function and status-seeking (e.g. Archer, 2006) the *risk-for-status* hypothesis which predicts, that testosterone is influencing risk-taking and serves to reach high status-seeking. Their results confirmed the hypothesis since exogenous testosterone increased their participants' risk-taking for an impact to increase social status (Vermeer et al., 2020).

Hypotheses 1b, 1d and 1f, that men score higher in assertiveness, status-seeking and risk-taking compared to women, are rejected. The scores for these traits are very similar for both groups and no significant differences have been found. Expected results have been, that there would be gender differences for the selected traits. Not finding the expected results could be explained by the target group consisting of a homogenous sample of students.

Hypotheses 2a and 2b stated for the second research question, that there is a positive association between perceived masculinity and entrepreneurial intentions and that men score higher in perceived masculinity than women, can be rejected. There is no significant influence of gender on perceived masculinity or entrepreneurial intentions. These results are surprising since known from previous research, the theoretical background of the masculinity contest culture involves men's desire to dominate and the avoidance of showing weakness or vulnerability (Connell & Messerschmidt, 2005).

In general, entrepreneurship professions are widely perceived as achievement-oriented and masculine surrounding (Ahl, 2006; Baron et al., 2001; Lewis, 2006). Referring back to a study conducted by Glick, Berdahl and Alonso (2018), men are proving their masculinity in their work culture. So, showing masculinity involves playing out rivals, working long and hard, earning the most and rising the highest (Glick, Berdahl, & Alonso, 2018). Furthermore, the masculinity contest culture involves men's desire to dominate and avoid showing weakness or vulnerability (Connell & Messerschmidt, 2005). Glick et al. (2018) concluded, based on their findings, that men are more motivated to prove their masculinity in their workplace by having high status or the responsibility to be the leader of a firm and to make crucial decisions. Just as assertiveness, being high in masculinity contest culture involves

traits that are also shown to be effective as an entrepreneur, but which do not serve as an influence on realizing entrepreneurial intentions.

An explanation that perceived masculinity does neither influence entrepreneurial intentions nor differ between gender can be due to the sample of individuals from higher education (David, 2015). David (2015) concludes that “gender equality is a highly politicized and contested notion in higher education today, given the changes towards neo-liberalism and its impacts upon women’s participation in global [and academic] labour markets.” (David, 2015, p.23). Thus, higher educational fields are more gender-equal and enable women to realize intentions appearing to be more dominated by men. This can be strengthened by demographical factors which have been found to influence entrepreneurial intentions. Researchers such as De Clercq et al. (2013) state that individuals from higher levels of society and higher academic levels have higher intentions to start entrepreneurship than individuals from lower societal and educational levels (2013).

An interesting finding of this research was that almost twice as many male students compared to female students answered the questions about whether they are determined to create a firm in the future and have very serious thoughts of starting a firm with “(strongly) agree”, although only 21.6% of the sample consisted of male students. This finding relates to previous research that different than women, men have stronger intentions to become an entrepreneur and although the number of women in entrepreneur positions increased drastically over the past years, evidence illustrates that the relationship between men and women working in entrepreneur positions is still 2:1 (de Bruin, Brush, & Welter, 2006; Diaz-Garcia & Jimenez-Moreno, 2010).

The fewer women dare to work in entrepreneurial professions, the fewer women start to realize their entrepreneurial intentions. This might lead to disadvantages for society because fewer entrepreneurs are resulting in decreased economic activity, less innovation and less creation of jobs (Sweida, & Reichard, 2013). Fewer women in entrepreneurial professions might also be caused by society’s pervasive stereotypes about men and women in general (Kray et al., 2004).

#### **4.1. Strengths, Limitations and Recommendations for Future Research**

A strength of this study are the measurement constructs which were highly reliable and valid. Another strength is that new insight is given to research whether perceived masculinity is a factor influencing entrepreneurial intentions.

There were several limitations in the present study that should be considered and addressed in future studies. One limitation of the research might be that before starting the

survey, a short introduction to the definition of entrepreneurial intentions could have been given since some individuals gave the feedback that they were unsure about what the construct is comprised of. Another limitation might be that the findings are based on a homogenous sample of students from the University of Twente. More heterogeneous samples could be used to ascertain whether similar and significant results would be measured.

Also, the focus could be kept on collecting data equally across sexes and age. The inequality between gender can be explained by the fact that the majority of respondents were psychology students from the University of Twente of which the biggest part consists of female students. One aspect which should be taken into account is to include a broader range of students from different study majors since the majority of the sample consists of psychology students. It is recommendable to conduct this study by including more students from business- and technology-based fields to compare whether there are gender differences in these target groups. Also, perceived masculinity differences and/or traits such as status-seeking, risk-taking or assertiveness influencing an individual's decision to realize entrepreneurial intentions could be studied further.

The study could be replicated by having a broader range of age and working fields as well. As already known from previous research, gender and age significantly impact the level of traits, such as status-seeking. Women and elderly are for instance less inclined to seek status compared to men and younger individuals (Delhey et al., 2021).

Furthermore, data of a sample consisting of individuals from lower socioeconomic status could be collected to compare whether there are differences in realizing entrepreneurial intentions in individuals from higher- and lower-socioeconomic status. It can be hypothesized that individuals from higher socioeconomic-status face less obstacles when realizing entrepreneurial intentions because their parents could support them with financial resources (Vondracek, 1998). A study conducted by Schoon and Duckworth (2012) illustrates that entrepreneurship in mid-adulthood is predicted by socio-economic status. Further, the study indicates that for women, having access to high socioeconomic resources positively correlates with starting an own business.

Another recommendation is to replicate this study with a target group of non-Western individuals. The study could address the hypotheses that men from Eastern countries tend to score higher in perceived masculinity and entrepreneurial intentions compared to women. This could be explained by fewer opportunities for women to receive higher education and the traditional role of women in Eastern culture (Martinez-Jimenez, 2009).

If the study would be replicated in future research with a different, more heterogeneous sample, new insights could arise. Based on this study, insight has been already gained about a positive association between status-seeking, risk-taking and entrepreneurial intentions. It is assumed, that no gender differences have been found in this sample due to the homogeneity of the sample. Previously assumed gender differences could have been found in another sample and could serve as a starting point for improvement of our education. For young students, special programs and trainings could be offered at school or universities to support enhancing these traits in women. Also, information about how to start entrepreneurship and how to combine it with traditional gender-role beliefs could be given to increase the number of women working in entrepreneurial positions.

Psychologists and individuals working in business practice such as in large companies could offer proper training programs to reduce stereotypical gender-role beliefs by offering more information about how to start entrepreneurship and how to decrease stereotypical thinking. Traits such as status-seeking and risk-taking or other personality traits such as confidence could be strengthened by these programs.

By teaching entrepreneurial skills at schools, universities and business practices, more people can be motivated to start own entrepreneurs. This would lead to the creation of new jobs, gaining new knowledge and improving the global economy (Lima, Lopes, Nassif, & Silva, 2015).

## **4.2. Conclusion**

The present study contributes to the overall knowledge and understanding of traits influencing entrepreneurial intentions since this report provides novel evidence on the influence of personality traits on entrepreneurial intentions. In conclusion, it can be stated that psychological traits do influence an individual's decisions to realize entrepreneurial intentions. Based on this research, it can be differentiated that skills such as status-seeking and risk-taking do increase an individual's decision to realize entrepreneurial intentions, whereas assertiveness or perceived masculinity did not predict entrepreneurial intentions. The examined traits did not explain the gender differences in entrepreneurial intentions. The lack of gender differences can probably be explained by the homogenous sample of highly educated and relatively young students. Gender differences influencing entrepreneurial intentions were not found in this sample.

Having a broader picture of traits influencing entrepreneurial intentions might help compile interventions to increase awareness that specific traits do influence entrepreneurial intentions and how to train and strengthen them. Workshops and special programs could be



offered for instance to help individuals decrease their fear of failure and instead increase risk-taking and self-confidence based on proper preparations for future self-employment. These programs could start already at schools or universities to create awareness about how to start own entrepreneurship and its importance for the global economy.

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## Appendix

Appendix A: Questionnaire to measure demographics, entrepreneurial intentions, psychological and attitudinal traits

### Demographics

1. How old are you?
2. What is your gender?
  - a. Female
  - b. Male
  - c. Other / prefer not to say
3. What is your country of birth?
  - a. Netherlands
  - b. Germany
  - c. Greek
  - d. US/UK
  - e. Other, please indicate:
4. Please indicate your position at the University of Twente.
  - a. Bachelor's student
  - b. Master's student
  - c. PhD student
  - d. Professor/lecturer
  - e. Alumni
  - f. Other, please specify
5. Are you an international student?
  - a. Yes (I'm an international student from another EU country)
  - b. Yes (I'm an international student from a non-EU country)
  - c. No (a local/Dutch student)
6. What is your study major at the University of Twente?
7. What is your socio-economic status?
  - a. 7-point likert scale from 1 (very poor) to 7 (very wealthy)

Please indicate to what extent you agree or disagree with the following statement:

1. How much knowledge does your curriculum (your major field of study) provide you in terms of starting your own business? (on a 4-point likert scale)

Please indicate to what extent you agree or disagree with the following statement:

2. To what extent do you feel that the UT stimulates students to start their own business?  
(on a 4-point likert scale)
  
3. What is your primary aspiration for future employment?
  - a. Work in my own business
  - b. Work in my family's business
  - c. Work in a large organization
  - d. Work in a small to medium size organization
  - e. Work in public administration
  - f. Other, please specify:
  
4. On a scale of 1 to 7, indicate the degree to which you consider yourself to be an entrepreneur, full of ideas and initiative to start your own business

#### Measures of Core Entrepreneurial Intention Model Elements

1. Being an entrepreneur implies more advantages than disadvantages to me
2. A career as an entrepreneur is attractive for me
3. if I had the opportunity and resources, I would like to start a firm
4. being an entrepreneur would entail great satisfactions for me
5. among various options, I would rather be an entrepreneur
6. to start a firm and keep it working would be easy for me
7. I am prepared to start a viable firm
8. I can control the creation process of a new firm
9. I know the necessary practical details to start a firm
10. I know how to develop an entrepreneurial project
11. if I try to start a firm, I would have a high probability of succeeding
12. I am ready to do anything to be an entrepreneur
13. my professional goals to become an entrepreneur
14. I will make every effort to start and run my own firm
15. I am determined to create a firm in the future

16. I have very seriously thought of starting a firm

17. I have the firm intention to start a firm someday

### Barriers

Please Rate on a scale ranging from 1 (very unimportant) to 5 (very important)

1. lack of assistance in assessing business viability
2. lack of organisations to assist entrepreneurs
3. lack of formal help to start a business
4. lack of legal assistance or counselling
5. fear of failure
6. lack of entrepreneurial competence
7. lack of knowledge
8. lack of experience in managing and accounting
9. lack of knowledge of the business world in the market

### Risk-Taking

I am someone who ...

1. Enjoys being reckless
2. takes risks
3. seeks danger
4. knows how to get around the rules
5. is willing to try anything once
6. seeks adventure
7. avoids dangerous situations
8. would never go hang-gliding or bungee jumping
9. would never make a high-risk investment
10. sticks to the rules

## Assertiveness

I am someone who...

1. Takes charge
2. has a strong personality
3. waits for others to lead the way
4. sees myself as a good leader
5. can talk to others into doing things
6. is the first to act
7. does not have an assertive personality
8. lacks the talent for influencing people
9. knows how to captivate people
10. holds back his/her opinions

## Status-Seeking

1. It is important to me to show my abilities.
2. Being very successful is important to me. I hope people will recognize my achievements.
3. It is important to me to get respect from others. I want people to do what I say.

Please indicate to what extent you agree or disagree with the following statements. Below is a number of workplace norm statements.

Please indicate to which extent you agree or disagree whether these norms apply to the entrepreneurial work culture (i.e., how entrepreneurs are expected to behave in establishing industrial ventures).

In the entrepreneurial work culture...

1. Admitting you don't know the answer looks weak
2. expressing any emotion other than anger or pride is seen as weak
3. seeking others advice is seen as weak
4. the most respected people don't show emotions

5. people who show doubt lose respect
6. it is important to be good in physical shape to be respected
7. people who are physically smaller have to work harder to get respect
8. physically imposing people have more influence
9. physical stamina is admired
10. athletic people especially admired
11. to succeed you can't let family interfere with your work
12. taking days off is frowned upon
13. to get ahead you need to be able to work long hours
14. leadership expects employees to put work first
15. people with significant demands outside of work don't make it very far
16. you are either "in" or you are "out", and once you are out you are out
17. if you don't stand up for yourself people will step on you
18. you can't be too trusting
19. you've got to watch your back
20. one person's loss is another person's gain

#### Collectivism Scale

1. It is my duty to take care of my family, even when I have to sacrifice what I want.
2. Parents and children must stay together as much as possible.
3. Family members should stick together, no matter what sacrifices are required.
4. It is important to me that I respect the decisions made by my groups.
5. The well-being of my coworkers is important to me.
6. If a coworker gets a prize, I would feel proud
7. I feel good when I cooperate with others.
8. To me, pleasure is spending time with others

