

Investigating the Influence of Gender on the Experience of Entrepreneurial Passion: A Quantitative Study

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ABSTRACT

Entrepreneurial Passion is seen as a driver for entrepreneurial action and can be connected to the success of a venture. Currently, there is not much research on the antecedent of Entrepreneurial passion, like Gender. Gender is not only an antecedent of passion, but also related to the concept of self-identity. Social role identities are different for women and men and entrepreneurship is often seen as a masculine task. This leads to women having a negative perception of their legitimacy, resulting in the experience of barriers to opportunity recognition and financing. The aim of this research is to investigate the influence of gender on entrepreneurial passion for its three domains. The findings show that there is no significant influence of gender on passion. For all three domains of passion, female and male entrepreneurs show no difference in their experience of passion. This shows that although women may face barriers, which are not experienced by men, these barriers do not impact their experience of entrepreneurial passion.

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Keywords

Entrepreneurship, Entrepreneurial Identity, Entrepreneurial Passion, Female Entrepreneurship, Gender, Higher education

1. INTRODUCTION

Entrepreneurial Passion (EP) is a growing research field among scholars, being at the heart of entrepreneurship based on its association with entrepreneurial efforts (Cardon, Gregoire, Steve, & Patel, 2013).

EP is often seen as a driver for entrepreneurial action since it drives various outcomes like “venture growth, persistence, problem solving” (Murnieks, Cardon, & Haynie, 2020) and other. Further, EP can “fuel motivation, enhance mental activity, and provide meaning to everyday work” (Cardon, Gregoire, Steve, & Patel, 2013, p. 512). Associated to EP are three aspects, being ‘Intense Positive Feeling’, ‘Centrality of Self-identity’ as well as three domains of EP (Cardon, Gregoire, Steve, & Patel, 2013). The three domains of passion are divided into ‘Passion for Inventing’, ‘Passion for Founding’ and ‘Passion for Developing’ (Cardon, Gregoire, Steve, & Patel, 2013).

There are difference antecedents of EP, including gender, that can influence the experience of passion (Newman, Obschonka, Moeller, & Chandan, 2019). Gender is not only an antecedent of passion, but also related to the concept of self-identity (Cardon, Gregoire, Steve, & Patel, 2013). There are not only key differences in gender identities, but it is also important to look at gender role stereotypes as a social consideration which influence the individual identities (Murnieks, Cardon, & Haynie, 2020).

Although, gender has an influence on the self-identity of an entrepreneur, it is most often looked at as a control variable instead of a predictive variable, that influences the experience of passion, thus not focusing on its potential impact on EP (Murnieks, Cardon, & Haynie, 2020). While Murnieks et al. (2020) already conducted a study on gender as a predictive variable, their study uses the framework developed by Vallerand et al. (2003), focusing on the experience of harmonious and obsessive passion among individuals. Further, their study does not analyze the differences for men and women in terms of experiencing the three different domains of EP based on Cardon et al.’s (2013) framework.

In this paper gender will be analyzed as a predictive variable rather than as a control variable, to research its predictive effect on the development and experience of entrepreneurial passion.

Overall, the research objective is to investigate the influence of gender on the experience of entrepreneurial passion for its three domains, ‘Passion for Inventing’, ‘Passion for Founding’ and ‘Passion for Developing’, based on the differences regarding the self-identity of men and women and its influence on the intense positive feeling.

1.1 Research Question

This research focuses on entrepreneurs who have founded or co-founded a business themselves and the difference in the experience of passion among men and women, thus the main research question is:

‘To what extent does the gender of an entrepreneur influence their experience of entrepreneurial passion?’

To answer the main research question, three sub questions are taken into account, which look at the concept of EP in more detail, focusing on the three domains of EP. An elaboration on these three domains of EP, to generate a better understanding, is done in the next part. The sub questions are:

‘To what extent does the gender of an entrepreneur influence their experience of ‘Passion for Inventing’?’

‘To what extent does the gender of an entrepreneur influence their experience of ‘Passion for Founding’?’

‘To what extent does the gender of an entrepreneur influence their experience of ‘Passion for Developing’?’

2. THEORETICAL FRAMEWORK

2.1 Entrepreneurial Passion

There are two main frameworks on Entrepreneurial Passion, one by Cardon et al. (2013) and one by Vallerand et al. (2003), only the framework of Cardon et al. is used for this study.

While both Vallerand et al. (2003) and Cardon et al. (2013) view passion as something that inspires people towards working on an activity due to their affection with the activity, Cardon et al. (2013) focuses on entrepreneurial passion and Vallerand et al. (2003) on passion in general.

Overall, both studies find that passion towards an activity is based on an individual’s positive feeling towards the activity as well as its significance in their life.

The main difference is that both studies identify different types of passion.

Cardon et al. (2013) define three types of passion, being ‘Passion for Inventing’, ‘Passion for Founding’ and ‘Passion for Developing’. These three types are said to be tasks and activities relevant to entrepreneurship. Cardon et al. (2013) distinguish between these three types of passion, since different entrepreneurs might experience the distinct activities of entrepreneurship differently, based on the separate challenges associated with each activity (Cardon, Gregoire, Steve, & Patel, 2013).

Vallerand et al. (2003) propose two types of passion, ‘obsessive passion’ (OB) and ‘harmonious passion’ (HP).

For this paper, the framework of Cardon et al. (2013) is used, thus the framework of Vallerand et al. (2003) will not be further taken into account nor discussed. The framework of Cardon et al. (2013) is used since a more detailed analysis can be conducted on the experienced difference between men and women for the three types of passion. Further, since the study is on entrepreneurs, the framework of Cardon et al. (2013) is a better fit, based on their scale being developed for entrepreneurial passion (Cardon, Gregoire, Steve, & Patel, 2013).

According to Cardon et al. (2013) “entrepreneurs are those who discover and exploit new products, new processes, and new ways of organizing”. Further, they define entrepreneurial passion as “an entrepreneur’s intense affective state accompanied by cognitive and behavioral manifestations of high personal value” (Cardon, Gregoire, Steve, & Patel, 2013).

Passion is said to be associated with the ability of an entrepreneur to raise funds as well as to motivate their key employees (Cardon, Gregoire, Steve, & Patel, 2013). Based on this, passion is an important aspect to take into account when talking about entrepreneurial action. It not only fuels motivation, but also fosters creativity and helps the entrepreneur to recognize new patterns crucial for the discovery of opportunities (Cardon, Gregoire, Steve, & Patel, 2013).

In their paper Cardon et al. (2013) appoint three aspects to the definition of EP. These three aspects are the experience of intense positive feeling, the centrality of self-identity and three entrepreneurial domains. These domains are inventing, founding and developing (Cardon, Gregoire, Steve, & Patel, 2013).

Further, they develop a scale, which will be used for this research, where they create different items for each entrepreneurial domain based on the experience of intense positive feelings and the centrality of self-identity. Based on those items, they are able to assess EP for each domain.

2.1.1 Intense Positive Feeling

The first aspect of entrepreneurial passion is the experience of '*Intense Positive Feelings*' towards an activity. Cardon et al. (2013) state that EP should not be viewed as a personality trait, but as something one experiences regarding activities the individual is passionate about (Cardon, Gregoire, Steve, & Patel, 2013). Additionally, it can be said that passion is rather an emotion, that is consciously accessible and enduring, while being of motivational quality (Cardon, Gregoire, Steve, & Patel, 2013) (Cardon, Wincent, Singh, & Drnovsek, 2009).

Further, the feeling is said to be overpowering and advocates enthusiasm and intense longing towards an activity (Cardon, Wincent, Singh, & Drnovsek, 2009). These positive feelings towards an activity can raise the confidence of the individual and with that increases the ability to be successful at the activity (Murnieks, Mosakowski, & Cardon, 2014).

2.1.2 Centrality of Self-Identity

In this section the second aspect of entrepreneurial passion, '*Centrality of Self-Identity*' is elaborated. To be able to experience intense positive feelings towards an activity, the feelings must be experienced for something meaningful, thus the feelings need to be central to the self-identity of the entrepreneur (Cardon, S., & Stevens, 2009).

For a feeling to have a connection to the identity of the individual it needs to be an internalized expectation about a characteristics that is deemed as central to the identity (Cardon, Gregoire, Steve, & Patel, 2013). Due to its centrality and importance, entrepreneurs have a strong inclination towards the activity (Cardon, Wincent, Singh, & Drnovsek, 2009), which leads to them acting in a manner that is consistent with their identity (Murnieks, Mosakowski, & Cardon, 2014).

As highly important identities are tied to more powerful feelings, it can be said that the factors that are influencing the importance of the activity, also influence the experienced passion (Murnieks, Mosakowski, & Cardon, 2014).

While identities influence the experienced feeling towards an activity, it is important to know that these identities originate mostly from social roles existing in the society the individual grows up in (Murnieks, Cardon, & Haynie, 2020). The identities are formed when an individual internalizes the roles and their characteristics (Murnieks, Cardon, & Haynie, 2020).

Though many individuals grow up in similar societies with similar role characteristics, individuals vary in how they interpret the social role, resulting in different self-identities (Murnieks, Cardon, & Haynie, 2020). In addition to different interpretations, identities are often organized hierarchically, by being filtered through the identity standards of oneself (Cardon, Gregoire, Steve, & Patel, 2013).

2.1.3 Three domains of entrepreneurial passion

Cardon et al. (2013) distinguished between three distinct roles every entrepreneur experiences differently, based on their experience of intense positive feelings and the centrality of their self-identity (Cardon, Gregoire, Steve, & Patel, 2013). These three domains, being '*Passion for Inventing*', '*Passion for Founding*' and '*Passion for Developing*', are explained in more detail below.

2.1.3.1 Passion for Inventing

The first domain, '*Passion for Inventing*' describes entrepreneurs who are fond of "identifying, inventing and exploring new opportunities" (Breugst, Domurath, Patzelt, & Klaukien, 2011).

Entrepreneurs with a '*Passion for Inventing*' often engage in new ways of doing things and with that enjoy the exploration of new opportunities as they search for new innovative ideas more than

others (Nasiru, Keat, & Bhatti, 2014) (Cardon, Gregoire, Steve, & Patel, 2013).

In addition, these entrepreneurs often invent new things as they desire to deliver new solutions. Further, the recognition of new opportunities and solutions acts as a motivator for them (Cardon, Gregoire, Steve, & Patel, 2013).

2.1.3.2 Passion for Founding

Second, the domain '*Passion for Founding*' is experienced by entrepreneurs who have a desire to found an organization and assemble the main resources as the main motivator (Cardon, Gregoire, Steve, & Patel, 2013).

These entrepreneurs seek to establish ventures for commercializing opportunities and might sell the venture after it is founded to be able to start a new business (Breugst, Domurath, Patzelt, & Klaukien, 2011) (Cardon, Gregoire, Steve, & Patel, 2013).

Their identity is often connected to the identity of their venture, as they see the tangible outcome, the founded venture, as a verification of their achievement (Nasiru, Keat, & Bhatti, 2014) (Cardon, Gregoire, Steve, & Patel, 2013).

2.1.3.3 Passion for Developing

Lastly, '*Passion for Developing*' is experienced by entrepreneurs who enjoy to nurture, grow and expand a venture after it is already founded (Breugst, Domurath, Patzelt, & Klaukien, 2011).

The main motivator for them is the expenditure of the business, of either a venture they founded themselves or also a venture which was not founded by them (Cardon, Gregoire, Steve, & Patel, 2013).

Further, they seek to make a return on the investment to support the venture, while also achieving a more lasting venture (Nasiru, Keat, & Bhatti, 2014) (Cardon, Gregoire, Steve, & Patel, 2013).

2.2 Entrepreneurial Identity

As already elaborated under 2.1.2 the identity of an entrepreneur plays an important role regarding their experience of passion. Cardon et al. (2013, p. 374) stated that: "Passion is more than the experience of strong emotions: it specifically concerns intense positive feelings for activities that are central and meaningful to an individual's self-identity."

Based on this, it is important to understand the development of one's identity and the differences of identity development between male and female entrepreneurs.

First, to give a general definition of entrepreneurial identity Murnieks et al. (2011, p. 140) state that: "Entrepreneurial identities are cognitive schemas of interpretations and behavioral prescriptions that allow individuals to understand what it means to be an entrepreneur." Further, to understand the development of entrepreneurial identities it is important to look at the society and how it views different roles (Murnieks, Mosakowski, & Cardon, 2011).

While social dimensions are often left out when considering entrepreneurs and their identities, these social dimensions often contribute to the development of an entrepreneurial identity (Chasserio, Pailot, & Poroli, 2014). Entrepreneurial identities in general are related to the cultural and discursive backgrounds of an individual (Hamilton, 2014).

Most of the time role identities are anchored in social stereotypes on which the development of the self-identity is dependent upon (Swail & Marlow, 2018). Based on these stereotypes, individuals feel like they need to create a sense of group membership by behaving in accordance to the social expectations to achieve a

belongingness as a type of legitimation (Swail & Marlow, 2018) (Chasserio, Pailot, & Poroli, 2014).

Overall, it can be said that the social identity, the attributes of one's identity based on social expectations, together with the personal identity, the attributes of one's identity based on oneself, make up the overall self-identity (Alvesson, Ashcraft, & Thomas, 2008).

In today's society gender identity is one of the most structuring factors influencing one's position in society, as social gender roles are a powerful tool of social regulation (Chasserio, Pailot, & Poroli, 2014). In western countries, society still views women's roles in society as related to the private sphere, meaning they are mostly identified with being a mother, sister or daughter. Thus, women are mostly expected to engage in 'feminine' roles, like taking care of the children (Chasserio, Pailot, & Poroli, 2014). Men on the other hand, being identified with 'masculine' roles, are expected to be dominant, independent and task oriented, while not being associated with their private sphere (Chasserio, Pailot, & Poroli, 2014).

Entrepreneurship is often seen as more fitting for a masculine identity (Swail & Marlow, 2018), as the ideal entrepreneurial actor is supposed to have masculine traits (Swail & Marlow, 2018). This results in female entrepreneurs having to manage different social identities at the same time (Chasserio, Pailot, & Poroli, 2014). They must not only engage in traditionally feminine roles, but also in new roles, as the masculine entrepreneurial identity (Chasserio, Pailot, & Poroli, 2014).

Due to the aspect that feminine roles are seen as opposite to the ideal entrepreneurial actor, women often have a negative perception of their legitimacy, which is critical to form a successful entrepreneurial identity (Swail & Marlow, 2018), resulting in a rather negative association between female entrepreneurship and the self-image contributing to EP (Orser, Elliott, & Leck, 2011).

2.2.1 Female Entrepreneurship

The above-mentioned issues female entrepreneurs experience regarding the view of different roles in today's society and the contribution to their self-identity give insights into the development of women's identities. This part is going to elaborate how the self-identity influences entrepreneurship for women.

Based on women's negative perception of their legitimacy, female entrepreneurs may experience self-imposed barriers that restrict them in their ability to recognize business opportunities (De Bruin, Brush, Welter, & Friederike, 2007). Further, women experience more often issues regarding the capitalization and financing of their businesses by acquiring resources, imposing barriers for the growth of their business (De Bruin, Brush, Welter, & Friederike, 2007). The first restriction indicates a lower ability to recognize opportunities, while 'Passion for Inventing' addresses an entrepreneur's ability to recognize new opportunities. The hypotheses based on the theory is:

H₀: 'There is no difference regarding the experience of 'Passion for Inventing' between men and women'

H_A: 'There is a difference regarding the experience of 'Passion for Inventing' between men and women'

Additionally, the second restriction, the acquisition of resources, together with the theory of 'Passion for Founding', that focuses on an entrepreneur's ability to gather resources, leads to the following hypotheses:

H₀: 'There is no difference regarding the experience of 'Passion for Founding' between men and women'

H_A: 'There is a difference regarding the experience of 'Passion for Founding' between men and women'

Further, the second restriction addressing the issues of gathering financing together with the literature on 'Passion for Developing' which focuses on an entrepreneur's ability to expand a business based on investments, results in the below mentioned hypotheses:

H₀: 'There is no difference regarding the experience of 'Passion for Developing' between men and women'

H_A: 'There is a difference regarding the experience of 'Passion for Developing' between men and women'

3. METHODOLOGY

The theoretical framework gave an insight regarding on what literature this study is based upon. In this section, the methodology which is used to conduct the research is explained in more detail.

The data set used in this research consists of numerical data, which are analyzed to interpret the influence of gender on passion. Based on this, this research will follow a quantitative research design, since: "Quantitative research, [...], deals with data that are numerical or that can be converted into numbers" (Williamson & Johanson, 2018, p. 429). Further, the purpose of this study is to test the theory regarding the influence that gender has on the experience of entrepreneurial passion, thus focuses on gender differences in experiencing EP (Babbie, 2016).

To further elaborate on the quantitative nature of this study, this study will be based on a correlational research design, since its purpose is to determine and measure the relationship between gender and entrepreneurial passion (Mertler, 2016).

3.1 Units of Analysis

The units of analysis for this research are entrepreneurs from the United States of America and South Africa. Both countries are first world countries, meaning they are industrialized and developed with a stable democracy and a capitalist economy (Kenton, 2019).

The entrepreneurs need to be the founder of the business and need to have acquired a higher education to be considered in this study. Only entrepreneurs who obtained a higher education will be interviewed to guarantee a certain level of coherence and to avoid disturbance based on the educational background.

The coherence is given since the entrepreneurs have the same requirements regarding their educational background. By having the same educational background, the same basic understanding for opportunity recognition and exploitation is given for all entrepreneurs (Moses, Olokundun, Akinbode, & Inelo, 2016). Higher education further increases the coherence of the sample, as Universities are often seen as the first initiators of entrepreneurial education (Nasiru, Keat, & Bhatti, 2015)

Overall, the sample consists of 259 entrepreneurs, of which 196 are male and 63 are female. This number represents the overall sample, prior to removing any outliers. All of the entrepreneurs have acquired a higher education and founded their own business.

3.2 Data Collection

Due to the current situation, the novel coronavirus SARS-CoV-2, it was not possible to gather any new data from entrepreneurs, thus secondary data, collected in previous years, was used for this study. This data was collected through the same questionnaire, based on the scale developed by Cardon et al. (2013), which was already intended to be used for this research.

The questionnaire is based on the scale introduced by Cardon et al. (2013). While the original scale is a 5-point Likert scale, the authors recommend to use the items with a 7-point Likert scale to guard against issues of range restrictions, thus the scale used for this research is a 7-point Likert scale and consists of 13 validated items, ranging from 7 (totally agree) to 1 (totally disagree).

From these 13 items five items measure 'Passion for Inventing', from which one item measures EP for 'centrality of self-identity' and four items measure EP for 'intense positive feelings'.

4 items each measure the domains 'Passion for Founding' as well as 'Passion for Developing', from which 1 item measures EP for 'centrality of self-identity' and 3 items measure EP for 'intense positive feelings' for both domains.

The analysis for this research does not investigate all 13 items separately, but the analysis is done for the separate domains. The scores for the separate domains are calculated by adding up all items of the domain and dividing it by the number of items.

3.3 Data Analysis

In this section, the analysis of the collected data is described explained. For the analysis the software IBM SPSS Statistics Version 26 is used. Further, for each dimension of passion a separate SPSS document is created in which the corresponding analysis is done. For the purpose of this analysis the independent variable, gender, as a dichotomous categorical variable, was dummy coded with 0 representing male and 1 representing female entrepreneurs. The dependent variable, one of the three domains of passion, is coded as a ratio variable, thus a continuous variable.

Prior to starting with the analysis of the dependent and independent variable and their relationship, the components of the dependent variable, the three domains of passion, and the items measuring these components in the survey are assessed.

First Cronbach's alpha is calculated to measure the reliability of the scale proposed by Cardon et al. (2013), thus measuring if the scale measures the intended construct, being EP and its domains (Taber, 2018). The scale has 5 items for 'Passion for Inventing' ($\alpha=0.826$), 4 items for 'Passion for Founding' ($\alpha=0.812$) and 4 items for 'Passion for Developing' ($\alpha=0.844$) (Appendix 8.1). As Cronbach's alpha should be higher 0.7 to indicate internal consistency (Taber, 2018), the scale for EP and its item seem to be reliable and there is no need to remove any items. Further, the outcome (Appendix 8.1) suggests that by removing any item, the score for Cronbach's alpha would be lower than the original score for all three domains.

Next, an Exploratory Factor Analysis (EFA) with an orthogonal varimax rotation is conducted to assess the construct validity and to examine the relationship between the variables by addressing multicollinearity (Williams, Onsmann, & Brown, 2010). First, the correlation matrix (Appendix 8.2.1) is looked at to check for any correlations between the items that are higher than 0.9. No correlations that are higher 0.9 are found. Further, the determinant is 0.001 which is greater than 0, indicating an absence of multicollinearity (Mohammed & Adamu, 2018). The Kaiser-Meyer-Olkin (KMO) test (Appendix 8.2.2) is reliable as the score is higher than 0.6 (Yong & Pearce, 2013) with a score of 0.886 and the Bartlett's test of Sphericity (Appendix 8.2.2) is significant with a p-value > 0.001 , which is below the significance level ($p<0.05$), showing that there are patterned relationships (Yong & Pearce, 2013). Based on the total variance explained (Appendix 8.2.3) it is found that there are 3 factors with an eigenvalue above 1, thus 3 components represent the underlying factors (Yong & Pearce, 2013). The rotated component matrix (Appendix 8.2.4) shows the variables loading

for each factor (Yong & Pearce, 2013). While 6 items show a loading for two components, indicating that they predict more than one component, they are only grouped together to the other items of the component for which they have the highest loading. Based on this, 5 items load for component 1, 4 items load for component 2 and 4 items load for component 3, these items are clustered together in a circle in the table (Appendix 8.2.4). As the contents of the items loading for component 1 reflect the same perception component 1 can be conceptualized as 'Passion for Inventing'. Similar to this, the contents of the items loading for component 2 indicate it being conceptualized as 'Passion for Founding' and the contents of the items loading for component 3 reflect it being conceptualized as 'Passion for Developing'. While the items can be clustered together based on their highest loading, the table shows not a 'clean' factor analysis, where each factor predicts only one item. This will be further discussed under 6. Discussion.

For the analysis of the relationship between the dependent and independent variable firstly, a general test to check for outliers is done. "Outliers are observations or measures that are suspicious because they are much smaller or much larger than the vast majority of the observation." (Cousineau & Chartier, 2010, p. 58) Outliers are more influential when the sample size is small, since the sample for this study is rather small with 259 entrepreneurs it is important to check for outliers and remove them, to increase the robustness of the sample (Cousineau & Chartier, 2010). This is done by creating boxplot diagrams, where the outliers are identified.

Next, the descriptive statistics are analyzed as "they are a useful way to summarise data and provide a description of the sample" (Marshall & Jonker, 2010, p. e7). First, the mean, median and mode indicate the measure of central tendency, which describes the tendency of the given data to cluster around a certain value (Nicholas & Jackie, 1999). Next, the dispersion of the data is assessed by looking at the standard deviation, the range and the minimum and maximum values of the given data (Nicholas & Jackie, 1999).

Third, the normality of the distribution is tested. For this the Shapiro-Wilk test of normality is used. While the original test was established for a sample size <50 , the test was later extended to fit a sample size of $n:50-2000$ (Royston, 1992). To interpret the result of the Shapiro-Wilk test one has to look at the significance of the test, if the test is significant the distribution is non-normal (Ghasemi & Zahediasl, 2012). The result of the test showed that the distribution is not normal for all three domains of EP.

The correct statistical test to use for the comparison of two independent groups, male and female, with a non-normal distribution is the Mann-Whitney U test, as it tests whether the means of the two independent groups are equal for a non-normal distribution (McCrum-Gardner, 2008). Further, it is important to determine whether a two-tailed or one-tailed test is used. For this analysis a two-tailed test is conducted, since the study investigates whether there are any differences between the two groups and not whether there is a difference in a specific direction (Hick, 1952).

Lastly, a linear regression analysis is conducted to predict the value of the dependent variable, the three dimensions of passion, for female and male entrepreneurs (DeCoster & Claypool, 2004). Further, the nature of the relationship between gender and the three dimensions of passion can be assessed by looking at R^2 , which indicates how much variation in the dependent variable is caused by the predictor (Kerr, Hall, & Kozub, 2002). Although not normally distributed, a linear regression analysis was conducted on the basis that based on a large sample size the linear

regression model is still valid (Schmidt & Finan, 2017). Further, as transforming the outcome to be normally distributed can bias the slope coefficient (Schmidt & Finan, 2017), it was decided to not transform the outcomes and to continue with a linear regression analysis with the given non-normal distribution. Together with the linear regression analysis, the correlation between the independent and the dependent variable is reported by using the Point Biserial Correlation Analysis, as the independent variable is categorical and the dependent variable is continuous (DeCoster & Claypool, 2004).

4. RESULTS

4.1 Passion for Inventing

Table 1: Descriptive Statistics for Passion for Inventing

Gender		Statistic	Std. Error
Inventing	Male	Mean	6.4969
		Median	6.8000
		Variance	.369
		Std. Deviation	.60779
		Minimum	4.60
		Maximum	7.00
	Female	Mean	6.1651
		Median	6.4000
		Variance	.712
		Std. Deviation	.84360
		Minimum	4.40
		Maximum	7.00

Starting with the descriptive statistics, shown in Table 1, the Mean, also called the average, is 6.4969 for male and 6.1651 for female entrepreneurs. While the mean is sensitive to extreme values, the median splits the distribution in half, for male entrepreneurs the median is 6.8 and for female entrepreneurs 6.4. As the standard deviation is the square root of the variance, it shows the spread of the data. For men the standard deviation is 0.6078 and for women 0.8436. Both female and male entrepreneurs have a maximum score of 7, and male entrepreneurs have a minimum score of 4.6 while female entrepreneurs have a minimum score of 4.4.

Table 2: Test of Normality for Passion for Inventing

		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Gender	Statistic	df	Sig.	Statistic	df	Sig.
Inventing	Male	.223	192	.000	.812	192	.000
	Female	.204	63	.000	.860	63	.000

a. Lilliefors Significance Correction

To assess whether the distribution of the data is normal, the Shapiro-Wilk test is used (Table 2). The Shapiro-Wilk test showed a significant departure from normality for male entrepreneurs, $W(192) = 0.812$, $p < 0.001$. Similar to the male entrepreneurs, the Shapiro-Wilk test also showed a significant departure from normality for female entrepreneurs, $W(63) = 0.860$, $p < 0.001$. Thus, both distributions are non-normal.

Table 3: Mann-Whitney U Test for Passion for Inventing

		Ranks		
		N	Mean Rank	Sum of Ranks
Inventing	Male	192	134.19	25764.50
	Female	63	109.13	6875.50
	Total	255		

Test Statistics^a

		Inventing
Mann-Whitney U		4859.500
Wilcoxon W		6875.500
Z		-2.429
Asymp. Sig. (2-tailed)		.015

a. Grouping Variable: Gender

To compare the mean of the distribution of the dependent variable 'Passion for Inventing' for the independent variable 'Gender' with the categories 'Male' and 'Female' a Mann-Whitney U test was carried out (Table 3). The category 'Male' (N=192) has a larger mean rank (134.19) than the category 'Female' (N=63) with mean rank (109.13). This means that first all ranks from both groups are ranked according to their score, then these scores are averaged for the groups, resulting in men scoring on average higher for 'Passion for Inventing' than women. This difference was found to be significant ($U = 4859.500$, $p = 0.015$).

Table 4: Point-Biserial Correlation for Passion for Inventing

Correlations

		Gender	Inventing
Gender	Pearson Correlation	1	-.209**
	Sig. (2-tailed)		.001
	N	255	255
Inventing	Pearson Correlation	-.209**	1
	Sig. (2-tailed)	.001	
	N	255	255

** . Correlation is significant at the 0.01 level (2-tailed).

Table 5: Linear Regression for Passion for Inventing

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Gender ^b	.	Enter

a. Dependent Variable: Inventing

b. All requested variables entered.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.209 ^a	.044	.040	.67327

a. Predictors: (Constant), Gender

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.222	1	5.222	11.520	.001 ^b
	Residual	114.681	253	.453		
	Total	119.903	254			
a. Dependent Variable: Inventing						
b. Predictors: (Constant), Gender						

Coefficients ^a					
Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
1	(Constant)	6.497	.049	133.712	.000
	Gender	-.332	.098	-3.394	.001
a. Dependent Variable: Inventing					

A point biserial correlation analysis was conducted to investigate the relationship between gender and 'Passion for Inventing'. There is a negative correlation between the two variables, which is statistically significant ($r_{pb} = -0.209$, $n = 255$, $p = 0.001$).

A linear regression analysis (Table 4) was conducted to predict 'Passion for Inventing' based on 'Gender'. A significant regression equation was found ($F(1,253) = 11.52$, $p = 0.001$) with an R^2 of 0.044. Female entrepreneurs' 'Passion for Inventing' predicted score is equal to $6.497 + (-0.332 \times 1)$, being 6.165. For male entrepreneurs the 'Passion for Inventing' score is equal to $6.491 + (-0.332 \times 0)$, being 6.491.

4.2 Passion for Founding

Table 6: Descriptive Statistics for Passion for Founding

Gender			Statistic	Std. Error
Founding	Male	Mean	6.2062	.05787
		Median	6.5000	
		Variance	.650	
		Std. Deviation	.80599	
		Minimum	3.25	
		Maximum	7.00	
	Female	Mean	6.0551	.11998
		Median	6.2500	
		Variance	.849	
		Std. Deviation	.92157	
		Minimum	3.50	
		Maximum	7.00	

In Table 5 the descriptive statistics for 'Passion for Founding' are shown. The mean is 6.2062 for male entrepreneurs and 6.0551 for female entrepreneurs. The median is 6.5000 for male and 6.2500 for female entrepreneurs. Regarding the spread of the data, the standard deviation for male entrepreneurs is 0.8060

while for female entrepreneurs it is 0.9216. Both, female and male entrepreneurs, have a maximum score of 7, while female entrepreneurs have a minimum score of 3.5 and male entrepreneurs of 3.25.

Table 7: Test of Normality for Passion for Founding

Kolmogorov-Smirnov ^a				Shapiro-Wilk		
Gender	Statistic	df	Sig.	Statistic	df	Sig.
Founding	Male	194	.000	.872	194	.000
	Female	59	.002	.890	59	.000
a. Lilliefors Significance Correction						

In Table 6 the normality of the distribution is analyzed by using the Shapiro-Wilk test. For passion for founding the Shapiro-Wilk test showed a significant departure from normality for male entrepreneurs, $W(194) = 0.872$, $p < 0.001$. For female entrepreneurs the Shapiro-Wilk test also shows a significant departure from normality, $W(59) = 0.890$, $p < 0.001$. Thus, both distributions are non-normal.

Table 8: Mann-Whitney U Test for Passion for Founding

Ranks				
	Gender	N	Mean Rank	Sum of Ranks
Founding	Male	194	129.35	25093.00
	Female	59	119.29	7038.00
	Total	253		

Test Statistics^a

	Founding
Mann-Whitney U	5268.000
Wilcoxon W	7038.000
Z	-.939
Asymp. Sig. (2-tailed)	.348

a. Grouping Variable: Gender

Based on the non-normal distribution of the variables, a Mann-Whitney U test was carried out (Table 7) to compare the mean of the distribution of the variable 'Passion for Founding' for the independent variable 'Gender' with the categories 'Male' and 'Female'. The category 'Male' ($N = 194$) has a larger mean rank (129.35) than the mean rank (119.29) of the category 'Female' ($N = 59$). This means that first all ranks from both groups are ranked according to their score, then these scores are averaged for the groups, resulting in men scoring on average higher for 'Passion for Founding' than women. This difference was found to not be statistically significant ($U = 5268.000$, $p = 0.348$).

Table 9: Point Biserial Correlation for Passion for Founding

Correlations			
		Gender	Founding
Gender	Pearson Correlation	1	-.077
	Sig. (2-tailed)		.224
	N	253	253
Founding	Pearson Correlation	-.077	1
	Sig. (2-tailed)	.224	
	N	253	253

Table 10: Linear Regression for Passion for Founding**Variables Entered/Removed^a**

Model	Variables Entered	Variables Removed	Method
1	Gender ^b	.	Enter

a. Dependent Variable: Founding

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.077 ^a	.006	.002	.83412

a. Predictors: (Constant), Gender

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.033	1	1.033	1.485	.224 ^b
	Residual	174.636	251	.696		
	Total	175.669	252			

a. Dependent Variable: Founding

b. Predictors: (Constant), Gender

Coefficients^a

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	6.206	.060		103.632	.000
	Gender	-.151	.124	-.077	-1.218	.224

a. Dependent Variable: Founding

A point biserial correlation analysis was conducted to investigate the relationship between gender and 'Passion for Founding'. There is a negative correlation between the two variables, which is not statistically significant ($r_{pb} = -0.077$, $n = 253$, $p = 0.224$).

To predict 'Passion for Founding' based on the gender of the participant, a linear regression analysis was conducted (Table 8). The regression equation was found to not be significant ($F(1,251) = 1.485$, $p = 0.224$), with an R^2 of 0.006. This means that the predicted score for 'Passion for Founding' for men is 6.206, which is higher than the predicted score for women, being 6.055.

4.3 Passion for Developing

Table 11: Descriptive Statistics for Passion for Developing

Gender		Statistic	Std. Error
Developing	Male	Mean	6.0807
		Median	6.2500
		Variance	.691
		Std. Deviation	.83102
		Minimum	3.75
		Maximum	7.00
	Female	Mean	5.8770
		Median	6.0000
		Variance	1.103
		Std. Deviation	1.05003
		Minimum	2.75
		Maximum	7.00

Table 9 shows the descriptive statistics for 'Passion for Developing' depending on the gender of the participant. Regarding the mean score, males scored an average of 6.0807 while females scored an average of 5.8770. For the median female entrepreneurs scored a 6 and male entrepreneurs a 6.25. The standard deviation, showing the spread of the data, is 0.8311 for men and 1.0500 for women. Again, both female and male

entrepreneurs have a maximum score of 7. For male entrepreneurs the minimum score is 3.75 and for female entrepreneurs 2.75.

Table 12: Test of Normality for Passion for Developing

		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
Developing	Gender	Statistic	df	Sig.	Statistic	df	Sig.
	Male	.134	189	.000	.907	189	.000
	Female	.146	63	.002	.902	63	.000

a. Lilliefors Significance Correction

In Table 9 the normality of the distribution for 'Passion for Developing' for male and female entrepreneurs is analyzed through the Shapiro-Wilk test. For male entrepreneurs' score for passion for developing the Shapiro-Wilk test showed a significant departure from normality, $W(189) = 0.907$, $p < 0.001$. For female entrepreneurs' score for 'Passion for Developing' the Shapiro-Wilk test also showed a significant departure from normality, $W(63) = 0.902$, $p < 0.001$. Found on this, both distributions are non-normal distributions.

Table 13: Mann-Whitney U Test for Passion for Developing

		Ranks		
Developing	Gender	N	Mean Rank	Sum of Ranks
	Male	189	129.09	24397.50
	Female	63	118.74	7480.50
	Total	252		

Test Statistics^a

Developing	
Mann-Whitney U	5464.500
Wilcoxon W	7480.500
Z	-.986
Asymp. Sig. (2-tailed)	.324

a. Grouping Variable: Gender

As the two variables, male and female, are non-normal distributed, the Mann-Whitney U test was conducted (Table 11) to compare the mean of the distribution of the variable 'Passion for Developing' for 'Gender' with the two categories 'Male' and 'Female'. The category 'Male' ($N = 189$) has a larger mean rank (129.09) than the category 'Female' ($N = 63$) and their mean rank (118.74). This means that first all ranks from both groups are ranked according to their score, then these scores are averaged for the groups, resulting in men scoring on average higher for 'Passion for Developing' than women. This difference in the mean was found to not be statistically significant ($U = 5464.500$, $p = 0.324$).

Table 14: Point Biserial Correlation for Passion for Developing

Correlations

		Gender	Developing
Gender	Pearson Correlation	1	-.099
	Sig. (2-tailed)		.117
	N	252	252
Developing	Pearson Correlation	-.099	1
	Sig. (2-tailed)	.117	
	N	252	252

Table 15: Linear Regression for Passion for Developing

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Gender ^b		Enter

a. Dependent Variable: Developing
b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.099 ^a	.010	.006	.89037

a. Predictors: (Constant), Gender

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.961	1	1.961	2.473	.117 ^b
	Residual	198.191	250	.793		
	Total	200.152	251			

a. Dependent Variable: Developing
b. Predictors: (Constant), Gender

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.081	.065		93.888	.000
	Gender	-.204	.130	-.099	-1.573	.117

a. Dependent Variable: Developing

A point biserial correlation analysis was conducted to investigate the relationship between gender and 'Passion for Developing'. There is a negative correlation between the two variables, which is not statistically significant ($r_{pb} = -0.099$, $n = 252$, $p = 0.117$).

A simple linear regression was computed to predict the participant's score for 'Passion for Developing' based on their gender (Table 12). The regression equation was found as non-significant ($F(1, 250) = 2.473$, $p = 0.117$), with an R^2 of 0.01. This means that the predicted score for female entrepreneurs is 5.877, which is lower than the score of male entrepreneurs, being 6.081.

5. FINDINGS AND CONCLUSION

In this part, the findings are discussed and interpreted for each passion domain to answer the main research question and to draw a final conclusion. As each sub question addresses one domain of entrepreneurial passion, these will be answered separately for each domain. In the end the findings for the different domains of EP, will be summarized and a main conclusion is drawn to answer the main research question: *'To what extent does the gender of an entrepreneur influence their experience of entrepreneurial passion'*

5.1 Passion for Inventing

In the theoretical framework it was discussed that female entrepreneurs are restricted regarding their opportunity recognition (De Bruin, Brush, Welter, & Friederike, 2007), which could restrict their 'Passion for Inventing'.

The descriptive statistics (Table 1) already indicate such a restriction regarding the experience of 'Passion for Inventing'. The mean as well as the median are lower for female entrepreneurs compared to male entrepreneurs. Further, the higher standard deviation, which is shown for women, indicates a larger spread of the data, which implies that the differences among female entrepreneurs are larger than the ones among male entrepreneurs. Lastly, the minimum value is lower for female entrepreneurs than for male entrepreneurs. This difference is rather small, but reveals that women experienced the lowest 'Passion for Inventing'.

The comparison of the mean of the distribution (Table 3) showed a significant outcome. Looking at the direction of the test, the difference shows that male entrepreneurs tend to score higher for 'Passion for Inventing' than female entrepreneurs.

Through the linear regression analysis (Table 4), a significant regression equation was found, meaning that there is a significant linear relationship between gender and 'Passion for Inventing'. Though, there is a significant linear relationship, this relationship is not very strong, as shown by the low value for R^2 of 0.044. This value reveals that 4.4% of the variation in 'Passion for Inventing' are caused by the gender of the entrepreneur. This caused variation is weak and implies that although there is a linear relationship, gender is not a strong predictor of 'Passion for Inventing'.

Based on the statistical significance of the Mann-Whitney U test and the linear regression analysis with the point-biserial correlation, the H_0 -Hypothesis is rejected and the H_A -hypothesis is accepted, meaning 'there is a difference regarding the experience of 'Passion for Inventing' between men and women'.

Whereas the findings do show that there is a statistically significant linear relationship between gender and 'Passion for Inventing', as well as a significant difference between female and male scores for 'Passion for Inventing', one has to look at these scores critically. The differences are there but are rather small even though being significant. Further, R^2 indicates that the identified differences do not influence 'Passion for Inventing' as much as the literature review suggested.

The sub question, this analysis is aimed at is: *'To what extent does the gender of an entrepreneur influence their experience of 'Passion for Inventing'?''*

The answer to this question is, that there is a significant difference in terms that male entrepreneurs experience 'Passion for Inventing' higher than female entrepreneurs, but the strength of this relationship is very low, thus it needs to be assessed cautiously.

5.2 Passion for Founding

The second restriction which was described in the theoretical framework, the financing of the business (De Bruin, Brush, Welter, & Friederike, 2007), indicated that women experience lower scores for 'Passion for Founding' based on their issues to generate investments and necessary resources.

While the descriptive statistics (Table 5) did show a difference in the mean and median, indicating that male entrepreneurs tend to experience 'Passion for Founding' more than female entrepreneurs, these differences are rather small. Further, both scores, for men and women, reporting the spread of the data are similar. For 'Passion for Founding' the men showed the lowest

minimum score and not the women. This already reveals that there might not be large differences between male and female entrepreneurs regarding the experience of 'Passion for Founding'.

Although the comparison of the mean of the distribution (Table 7) showed a higher mean rank for male entrepreneurs, this outcome was not significant, and the difference is small.

Similar to the comparison of the mean the linear regression analysis (Table 8) showed that the regression equation is not significant. Regarding R^2 , only 0.6% of the variation in 'Passion for Founding' is caused by the gender of the entrepreneur.

Based on the Mann-Whitney U test and the linear regression analysis with the point-biserial correlation not being statistically significant, the H_0 -Hypothesis is accepted and the H_A -hypothesis is rejected, meaning there is no difference regarding the experience of 'Passion for Founding' between men and women.

As opposed to the literature, the findings suggest that female entrepreneurs experience similar levels of 'Passion for Founding' as men, although they might be restricted regarding the acquisition of financing and resources. There are minor differences between men and women, but these are not statistically significant and therefore, are not seen as evidence of such differences in the experience of passion.

The sub question addressing this analysis is: *'To what extent does the gender of an entrepreneur influence their experience of 'Passion for Founding'?''*

The answer to this sub question is, that there are no considerable differences between male and female entrepreneurs regarding the experience of 'Passion for Founding'.

5.3 Passion for Developing

Coming back to the second restriction described in the theoretical framework, the financing of the business (De Bruin, Brush, Welter, & Friederike, 2007), it not only indicates a lower experience of 'Passion for Founding', but also indicates a lower experience of 'Passion for Developing', based on the difficulty to acquire investments to grow the business.

The descriptive statistics (Table 9) show a lower mean and median score for female entrepreneurs compared to male entrepreneurs, indicating a lower experience of 'Passion for Developing' for women. At the same time, the spread of the data is larger for women than for men, although the difference is not large. Further, applicable to the findings in the theory, female entrepreneurs scored the lower minimum score.

While all these descriptive statistics indicate a difference regarding the experience of 'Passion for Developing', the mean comparison (Table 11) showed that the identified differences are in fact there, as male entrepreneurs have the larger mean rank. But these findings are not significant, as the difference is not large enough. Therefore, there is no difference between the female and male scores for 'Passion for Developing'.

Additionally, the simple linear regressions (Table 12) showed that the regressions equation was not significant either. Only 1% of the variation in 'Passion for Developing' was caused by the gender of the entrepreneur. Thus, there is no significant linear relationship between gender and 'Passion for Developing'.

Based on the Mann-Whitney U test and the linear regression analysis with the point-biserial correlation not being statistically significant, the H_0 -Hypothesis is accepted and the H_A -hypothesis is rejected, meaning 'there is no difference regarding the experience of 'Passion for Developing' between men and women'.

Contrary to the literature that was analyzed, female entrepreneurs experience 'Passion for Developing' not differently than male entrepreneurs. While some outcomes of the analysis might seem like they suggest that there are differences, none of these outcomes are of statistical significance.

As a sub question, it was asked: *'To what extent does the gender of an entrepreneur influence their experience of 'Passion for Developing'?''*

Here the answer is, that male and female entrepreneurs experience 'Passion for Developing' mostly similar and no extensive differences have been found.

5.4 Conclusion

Until now not much attention has been paid to the antecedents of entrepreneurial passion (Newman, Obschonka, Moeller, & Chandan, 2019). Gender, being an antecedent, has only been researched as an instrumental factor for Vallerand et al.'s (2003) framework (Murnieks, Cardon, & Haynie, 2020). Based on the association between gender and the concept of self-identity, it is of interest to research the influence of gender on the experience of entrepreneurial passion for its three dimension (Cardon, Gregoire, Steve, & Patel, 2013).

The literature discussed under 2. Theoretical Framework suggests that social expectations form the self-identity of an individual, as well as, the entrepreneurial identity, being interpretations of what it means to be an entrepreneur (Murnieks, Mosakowski, & Cardon, 2011). Based on this it was derived that the social expectations for being a woman and the social expectations of what it means to be an entrepreneur are different and seen as opposite (Swail & Marlow, 2018) (Chasserio, Pailot, & Poroli, 2014). This not only results in women having a negative perception of their legitimacy, but also in other members from society seeing them as not fitting the role of an entrepreneur (Swail & Marlow, 2018).

These negative perceptions can influence the opportunity recognition of women as well as their ability to generate financing and resources (De Bruin, Brush, Welter, & Friederike, 2007). Based on this, it could be assumed that female entrepreneurs might experience a lower degree of passion for all three domains than male entrepreneurs.

Contrary to these literature findings, the findings from the analysis suggest that women do not necessarily experience a lower degree of passion.

Only for 'Passion for Inventing' a significant difference was found, where men experience higher levels of passion. For 'Passion for Founding' and 'Passion for Developing' no significant differences have been found to support the literature findings. Though, a statistically significant difference was found for 'Passion for Inventing', gender only causes 4.4% of the variation regarding the experience of 'Passion for Inventing' and therefore, is a weak predictor.

As the main research question is: *'To what extent does the gender of an entrepreneur influence their experience of entrepreneurial passion?''*, and is answered by looking at the difference in the experience of the three dimensions of EP, it can be concluded that gender does not influence the experience of entrepreneurial passion.

This shows that although women may face barriers, which are not experienced by men, these barriers do not impact their experience of passion.

6. DISCUSSION

At the moment, there is a lack of studies on gender as an instrumental variable regarding entrepreneurial passion. Most studies focus on gender as a control variable, ignoring its potentially influential role. The research that has been conducted on the influence of gender on passion was based on the framework from Vallerand et al. (2003), whereas this research uses the distinct scale of Cardon et al. (2013).

While female entrepreneurship is a more widely researched topic, it is still interesting to connect the theory of female entrepreneurship to the theory of entrepreneurial passion. This paper researches the effect of gender, based on the literature about female entrepreneurship, on entrepreneurial passion. Based on this, this research adds new insights into the topics of entrepreneurial passion and female entrepreneurship, while investigating whether gender impacts the experience of entrepreneurial passion.

The findings, contrary to the literature, suggest that gender does not influence the experience of entrepreneurial passion for two of its three domains, namely 'Passion for Founding' and 'Passion for Developing'. This finding could be explained based on the outcome of the explanatory factor analysis. While the domain 'Passion for Inventing' should have 5 items loading, the EFA showed that there are 6 items loading for it. Similar to this, the domains 'Passion for Founding' and 'Passion for Developing' should have 4 items each, but EFA shows that 'Passion for Founding' has 7 items loading and 'Passion for Developing' has 6 items loading. Based on this it can be argued that there are overall 6 items which were interpreted incorrectly by the participants of the questionnaire. These 6 items, which were interpreted incorrectly, can explain, why there is a significant difference between men and women regarding the experience of 'Passion for Inventing', but not for the experience of 'Passion for Founding' and 'Passion for Developing'. Only one of the items that were supposed to measure 'Passion for Inventing' was interpreted incorrectly, while 3 items that were supposed to measure 'Passion for Founding' and 2 items that were supposed to measure 'Passion for Developing' were interpreted incorrectly. 'Passion for Inventing' was the only domain that showed a significant difference, while also being the domain with the least number of items being interpreted incorrectly. Based on this, it can be argued that the difference in the findings regarding the experience of passion for the different domains could be connected to the number of items being interpreted inaccurately for each domain.

The incorrect interpretation of some items, resulting in some findings from this study being contrary to the literature findings, could be based on the questionnaire being filled out by entrepreneurs from America as well as South Africa. The differences in the culture and the beliefs of entrepreneurs from those two countries can affect their understanding of the item of the questionnaire and thus, lead to a potential misinterpretation of an item depending on the nationality of the entrepreneur.

Further, based on these findings it would be interesting to investigate the identified restrictions for female entrepreneur and their effect in a different setting. For this research entrepreneurs who already successfully founded a business were used. Some of the identified restrictions, like social role perceptions and self-imposed barriers, can also affect the process of becoming an entrepreneur. Therefore, the research could be extended to investigate whether aspiring female entrepreneurs are restricted by these findings in terms of becoming an entrepreneur in the first place.

Additionally, this research helps female entrepreneurs to be seen as fitting the role of an entrepreneur, by showing that women experience the same degree of passion as men.

It is interesting for investors to see that women experience the same degree of passion as men and that gender does not influence this experience. This way investors might change their view on women as entrepreneurs and invest more often in ventures founded by women.

Further, this study aims at increasing awareness for a change in how the ideal entrepreneur is seen. A change in the picture of entrepreneurs shows women they do not have to question their legitimacy as female entrepreneurs. As an entrepreneur no longer needs to be 'masculine' to experience high degrees of passion for inventing, founding and developing.

6.1 Limitations and Future Research

Due to Covid 19, it was not possible to gather any new data for the purpose of this paper in time. Based on this, secondary data had to be used, which was already collected in the previous years.

As the research focuses on the differences between women and men it is important to have a balanced female-male participants ratio. Out of 259 entrepreneurs that participated in this study, 196 were male and 63 were female. Thus, the female-male ratio was not balanced. By using a more balanced dataset, the findings would be more representative as to assess the differences between men and women.

In addition to that, the sample size, being 259, is rather small to be able to draw a clear conclusion for the whole population. In the future the research can be extended by adding more samples to the existing set and therefore, creating a bigger sample for better representativeness.

Further, this study was conducted in two different countries, the United States of America and South Africa. Both of these countries are developed countries. By incorporating more developed countries the generalization of the findings would improve and the findings would be more representative. In addition to this, it would also be interesting to conduct the same research in undeveloped countries to investigate if different conclusions can be drawn depending on the economy of the country.

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9. APPENDIX

9.1 Cronbach's Alpha

9.1.1 Passion for Inventing

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.826	.830	5

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
EP1inv	25.43	9.486	.533	.392	.816
EP2inv	25.51	9.158	.705	.557	.773
EP3inv	25.48	9.685	.543	.334	.813
EP4inv	25.58	8.346	.708	.533	.766
EP5inv	25.64	7.858	.655	.484	.786

9.1.2 Passion for Founding

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.812	.828	4

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
EP6fnd	18.11	10.480	.655	.470	.755
EP7fnd	17.99	10.678	.685	.487	.746
EP8fnd	18.15	10.958	.645	.420	.763
EP9fnd	18.68	8.375	.611	.383	.802

9.1.3 Passion for Developing

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.844	.850	4

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
EP10dev	17.95	9.285	.703	.500	.792
EP11dev	17.87	9.603	.697	.498	.794
EP12dev	17.64	10.775	.710	.508	.799
EP13dev	17.90	9.398	.638	.409	.824

9.2 Exploratory Factor Analysis (EFA)

9.2.1 Correlation Matrix

Correlation Matrix ^a														
Correlation	EP1inv	EP2inv	EP3inv	EP4inv	EP5inv	EP6fnd	EP7fnd	EP8fnd	EP9fnd	EP10dev	EP11dev	EP12dev	EP13dev	EP13dev
EP1inv	1.000	.619	.302	.464	.367	.435	.314	.423	.292	.356	.249	.290	.390	
EP2inv	.619	1.000	.416	.640	.508	.431	.317	.385	.320	.420	.340	.367	.430	
EP3inv	.302	.416	1.000	.451	.551	.265	.239	.269	.228	.339	.268	.344	.303	
EP4inv	.464	.640	.451	1.000	.619	.473	.339	.405	.246	.388	.362	.331	.449	
EP5inv	.367	.508	.551	.619	1.000	.333	.258	.264	.240	.301	.246	.228	.408	
EP6fnd	.435	.431	.265	.473	.333	1.000	.626	.560	.483	.389	.360	.308	.478	
EP7fnd	.317	.317	.239	.339	.258	.626	1.000	.536	.545	.420	.293	.373	.425	
EP8fnd	.423	.385	.269	.405	.264	.560	.536	1.000	.527	.582	.470	.448	.622	
EP9fnd	.292	.320	.228	.246	.240	.483	.545	.527	1.000	.449	.358	.419	.619	
EP10dev	.356	.420	.339	.388	.301	.389	.420	.582	.449	1.000	.619	.615	.557	
EP11dev	.249	.340	.268	.362	.246	.360	.293	.470	.358	.619	1.000	.625	.538	
EP12dev	.290	.367	.344	.331	.228	.308	.373	.448	.419	.615	.625	1.000	.561	
EP13dev	.390	.430	.303	.449	.408	.478	.425	.622	.619	.557	.538	.561	1.000	

a. Determinant = .001

9.2.2 KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.886
Bartlett's Test of Sphericity	Approx. Chi-Square	1681.103
	df	78
	Sig.	.000

9.2.3 Total Variance Explained

Total Variance Explained									
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Rotation Sums of Squared Loadings	Total	% of Variance
1	5.973	45.946	45.946	5.973	45.946	45.946	3.002	23.092	23.092
2	1.547	11.902	57.848	1.547	11.902	57.848	2.867	22.057	45.149
3	1.120	8.616	66.464	1.120	8.616	66.464	2.771	21.314	66.464
4	.794	6.106	72.570						
5	.601	4.625	77.195						
6	.572	4.400	81.595						
7	.473	3.635	85.231						
8	.403	3.100	88.330						
9	.365	2.806	91.137						
10	.357	2.745	93.881						
11	.288	2.213	96.094						
12	.268	2.058	98.152						
13	.240	1.848	100.000						

Extraction Method: Principal Component Analysis.

9.2.4 Rotated Component Matrix

Rotated Component Matrix^a

	Component		
	1	2	3
EP5inv	.809		
EP4inv	.782		
EP2inv	.746		
EP3inv	.681		
EP1inv	.590	.408	
EP7fnd		.800	
EP6fnd	.324	.774	
EP9fnd		.697	.369
EP8fnd		.657	.442
EP11dev			.819
EP12dev			.819
EP10dev		.310	.741
EP13dev		.492	.581

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.^a

a. Rotation converged in 5 iterations.