The effects of National Culture on adoption of Effectuation approach by Entrepreneurs

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ABSTRACT

Gradual technological advancements have significantly disrupted the business environments. With the world becoming increasingly connected, a new focus was placed on the concept of entrepreneurship, especially in context of new, innovative products and services, technological advancements and availability of capital. Consequently, more research was conducted on the underlying psychological models and the decision making of entrepreneurs.

The literature nominates two dominant entrepreneurial behaviour approaches , effectuation and causation. Effectuation can be described as an emergent rather than meticulously planned method of making decisions within business environments in which the end-goal is substitutable according to dynamic means contingent on the changes within business environments. Entrepreneurs adopting the causation approach, on the contrary, see the end goal as a given, with the focus being on finding the most appropriate means necessary to realize it.

The previous research identified a link between utilizing effectuation and enhanced value creation within corporate ventures via the creation of innovative business models, thus conceptually lending weight to the idea that a dynamic, flexible method of making decisions resonates with disruptive business environments. Leaning on these findings, the research paper particularly focuses on antecedents which affect the adoption of either of the behavioural approaches, in an effort to investigate whether certain entrepreneurs are equipped for enhanced value creation within their respective ventures, due to custom implications of the antecedent they possess.

The paper accentuates national culture as a potential antecedent, known to have significant implications on the individuals' decision making. The theoretical model in use segregates cultures into tight and loose. Tight cultures are classified as ones with a wide range of strict norms and low tolerance for deviance from them, while loose are characterized with weak social norms and high tolerance for deviation. Based on the theoretical similarities between the concepts, the paper hypothesizes that entrepreneurs originating from loose cultures will resonate more with the effectual approach, while entrepreneurs originating from tight cultures with the causal approach.

The results of the study, expanded upon in the further parts of the report, are partially supportive of the hypotheses.

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Keywords

Entrepreneurship, effectuation, causation, national culture, tightness, looseness, decision-making

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1. INTRODUCTION

1.1 The Background

The value of business planning as a determinant for effective business management has been a subject of a long-lasting debate heating up towards the end of the twentieth century (Ansoff, 1991; Mintzberg and Waters, 1985; Porter, 1985). With planning schools from one perspective, propagating that planning directly facilitates the development of enterprises by ensuring efficient use of resources and decision speed (Delmar and Shane, 2003), and the school opposing from another, claiming that firm's top managements' time spent on planning in fact results in lower returns (Bhide, 2000) , low strategic flexibility, as well as causing potential perception inflexibility and organizational inertia (Vesper, 1993), the scholars were attempting to substantiate the necessity of planning in the context of effective business management.

However, the nature of current, ever-changing global business environments, characterized by high innovation rate, high speed of change and therefore a high degree of uncertainty, along with digitalization and globalization of business it implies, has propelled effectuation as one of the most important modes of behaviour an entrepreneur may possess in conducting business or otherwise making an entrepreneurial entity, especially in context of technological and innovative products (McMullen & Dimov 2013; McMullen & Shepherd 2006).

Contrary to the planning approach, effectuation can be described as a mode of behaviour set in place to combat radical uncertainty of the dynamic business environments by avoiding the rigid "lock-in" stemming from thorough planning. Adopting the effectuation approach, entrepreneurs attempt to overcome unpredictability by embracing the changes in the business environment, and thus trying to actively co-shape the future with the dynamic means readily available to them, rather than solely focus on the "set-in-stone" end-goal and corresponding planning in regards to allocation of specific resources necessary to achieve it. (Sarasvathy 2001). The question posed from the perspective of an entrepreneur adopting the effectuation approach in his business environment would be : "given the uncertain world, what could I do with the means , resources and capabilities I already have or could mobilize in order to create or manage a business venture ?" .

Causation, on the other hand, is the contrasting approach, advocative of planning, wherein entrepreneurs see the end goal as a non-flexible, non-changeable concept, with the focus then being on finding the appropriate means required to realize it. An entrepreneur adopting the causation approach would ask himself : "Given the end-goal, what means and resources should I mobilize in order to best attain it ?" (Sarasvathy, 2001).

1.2 Research Gap

In their research on the effects of effectuation and causation on corporate venture success, Futterer et al. (Futterer et al., 2018) have identified a significant relationship between utilizing effectuation as a mode of behaviour and enhanced value creation in dynamic business environments.

Drawing on their research, we are interested in identifying whether it is plausible that some entrepreneurs/groups of entrepreneurs are innately better prepared to tackle uncertainty and consequently more efficiently create value in dynamic business environments, due to inherently adopting or being more comfortable with the effectuation approach. To do so, the focus will be on its antecedents, and more specifically, whether certain entrepreneurs are more likely to possess antecedents that lead to the adoption of effectuation as the default mode of entrepreneurial behaviour.

Reflecting on the comprehensive literature review on effectuation conducted by Grégoire & Cherchem, the scholars have particularly investigated its antecedents, or in other words, the preceding factors that influence the adoption of the effectuation approach (Grégoire & Cherchem 2019). Focusing on a total of ten different studies concerning the individual antecedents of adopting the effectuation approach, the two researchers rendered the prior analysis on the antecedents of effectuation inconclusive, strongly encouraging further research on the topic of factors influencing adoption/diminishing of effectuation as the default mode of entrepreneurial behaviour.

Decision-making process of an individual is notably influenced by the national culture he is related to (Hopp & Stephan, 2012), due to the fact that people from different cultural backgrounds prefer different ways of handling different situations (Smith, Dugan, Peterson, & Leung, 1998). Individuals raised or living in different nations develop a certain set of shared assumptions and motivational needs that some members of the other nations do not possess (Gannon 1994). As such, the specific national culture stemming from nationality shapes the cognitive scheme of individuals belonging to it, assigning definition and worth to motivational attributes, as well as guiding the choices and accepting/setting standard norms of behaviour (Erez & Earley 1993).

Hence, it can be deduced that national culture plays a significant formative role in thinking/developing views of an individual, or in this case, and relating to the business environment, his adoption of either of the entrepreneurial behaviour approaches. Tying this into the context of entrepreneurship further, we look back on Hofstede's work identifying a total of six key dimensions as by-products of national cultures, to be mutually shared among its members, along which these cultures could be analyzed upon. These include uncertainty avoidance, masculinity versus femininity, individualism versus collectivism, power distance, indulgence versus constraint and long versus short-term orientation (Hofstede 1980).

The link between Hofstede's cultural dimensions and entrepreneurship was analyzed through various research. A consistent connection between culture and entrepreneurship was identified via the corporate innovation championing styles, whereas uncertainty-accepting cultures displayed a preference towards organizational mavericks, contrary to uncertainty-avoidance cultures preferring champions that adhere to consistent organizational rules (Shane, 1994b, 1995; Shane & Venkataraman, 1996).

Further research on the association between culture and entry mode into new markets, an important entrepreneurial process, indicated that cultures with moderate-to-high power distance prefer wholly owned subsidiaries in the context of entrepreneurship , while low power distance cultures favour joint ventures (Makino & Neupert, 2000). Additionally, Morris et al. (Morris et al., 1993) concluded that members' entrepreneurship, and therefore entrepreneurial modes of behaviour would not be represented in cultures characterised by extreme levels of collectivism/individualism,but moderate ones instead.

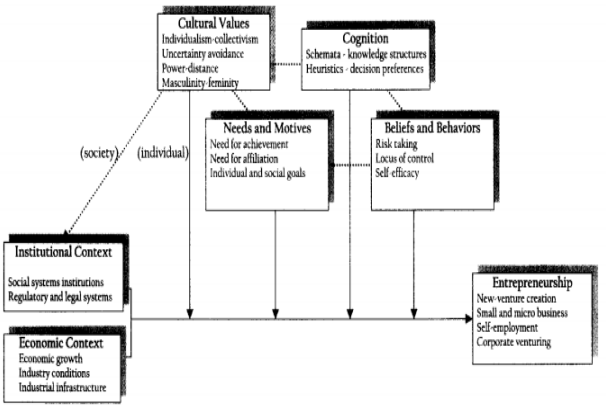

Figure 1. A model of Culture's Association with Entrepreneurship *(Hayton, George, & Zahra, National Culture and Entrepreneurship : A Review of Behavioral Research 2002 ;p46)*

With a significant relationship between entrepreneurship and national culture as one of the contingents for its development and forming characteristics made, this research will use the overarching theory and classification of cultures depicted by Gelfand et al. (Gelfand et al., 2011) in order to help substantiate its effect. Gelfand segregates national culture into two different categories, tight and loose, based on the culture-specific tolerance towards general deviance from the norm/law within the given society (Gelfand et al, 2011).

Collective cultural values within a nation, as previously described, are expectedly going to shape the socio-political institutions within it (Baum et al., 1993; McGrath et al.,1992a), which in turn with economical and nature-related conditions shape the standards and norms within a society (Gelfand et al, 2011). The degree to which how strictly these norms are adhered to, and what is the generally accepted degree of deviance in relation to them indicate whether a national culture will be classified as tight or loose.

Gelfand describes tight cultures as ones with low tolerance for deviation, in turn enforced by strict legislation and distinct formal modes of interaction placed in often autocratic social systems predominated by rigidity (Gelfand et al, 2011). For instance, and in context of entrepreneurship, this can be observed within the previously mentioned consistent organizational rules that innovation championing entrepreneurs are expected to abide by within the uncertainty-avoiding cultures, as well as within cultures with a low degree of freedom that disencourage risk taking behaviour and independent thinking, resulting in low propensity to develop and initiate radical innovation in context of entrepreneurship (Herbig & Miller, 1992; Herbig, 1994).

Loose cultures, however, are often found in democratic social systems characterized by an, in comparison, high tolerance for deviation, loose modes of interaction, relaxed legislation, and present a complete contrast, predominated by increased degree of freedom in movement and expression, and more importantly, economies with less government intervention, facilitating business individualism and entrepreneurship (Gelfand et al, 2011).

This research aims to attempt and provide an answer to the question whether entrepreneur members of certain cultures are likely to achieve enhanced value creation within their ventures, in comparison to their peers, by inherently being more adoptive of the effectuation approach due to custom cultural implications/characteristics of the culture they belong to rendering them more enabled to work in and adapt to ever-changing business environments.

The following section of the report will expand upon each of the theoretical concepts used in the research, before moving on to the hypothesis made as well as the statistical tests conducted.

Research Question : *To what extent can the effects of tight/loose cultures be seen on the adoption of effectuation/causation behavioural approaches of an entrepreneur ?*

2. THEORY

2.1 Effectuation

Effectuation, taken as a desired entrepreneurial skill in the current, dynamic, business environment, was selected as the dependent variable for the research.

As previously discussed, effectuation can be seen as an emergent, rather than meticulously planned approach of making entrepreneurial decisions in regards to creating entities such as firms, markets or economies, characterised by using the means readily available in order to construct and produce a variety of vastly different results with an aim to ultimately select the most beneficial one. It can be described as an approach predominated by flexibility (Sarasvathy, 2001). The use of the effectuation approach can principally be seen centered around situations blurred by uncertainty, in which it is fundamentally difficult or altogether impossible to predict the future (Sarasvathy, Dew, Read & Wiltbank, 2009).

As such, understanding and being able to implement effectuation as a mode of entrepreneurial behaviour and actively co-shape the future is becoming an increasing necessity in most fields today, further enabled by technology and its constant development, internationalization of businesses and uncertain business environments. Therefore, the presence of effectuation, or lack thereof, can also be viewed as one of the crucial factors for an entity's economic growth and survival, whereas the lack of effectuation-related behaviour or the ability to implement it will find the entrepreneur unable to sufficiently combat and address the challenges he is faced with in rapidly changing business environments, leading to downfall, or otherwise, able to sufficiently address the challenges faced with and consequently grow and assume a larger market share (Gabrielsson & Gabrielsson, 2013).

The defining characteristics of an entrepreneur adopting either of the behavioural approaches have been initially developed in 2001 (Sarasvathy, 2001), and expanded upon by Alsos et al. (Alsos et al., 2014). From the standpoint of an entrepreneur adopting the effectuation approach, in contrast to one adopting the causation approach, he is oriented towards means versus goals, more focused on affordable loss versus expected returns in evaluating business opportunities and prefers exploiting dynamic contingencies over the pre-existing knowledge. Additionally, such entrepreneurs prefer predicting the uncertain

future and developing coping methods, rather than attempting to control it (Alsos et al., 2014).

2.2 Causation

As pointed out by Sarasvathy (2001: 245), "Causation processes take a particular effect as given and focus on selecting between means to create that effect." Therefore, causation can be viewed as contingent on prediction of the particular given effect/goal and hence subsequent planning to achieve it, while effectuation rests on the logic of being able to maintain control in unpredictable environments (Sarasvathy, 2001).

Entrepreneurs adopting the causation model of entrepreneurial behaviour clearly define the goal targets in advance. The venture is envisioned since the very beginning and all efforts are directed strictly at achieving the planned state, followed by a systematic search for entrepreneurial opportunities that meet the goal targets in order to attain the goal itself (Fiet, 2002; Herron and Sapienza, 1992). The underlying logic of an entrepreneur adopting causation as his model of entrepreneurial behaviour would be "that the extent to which the future can be predicted, is the extent to which it can be controlled" (Sarasvathy 2001:251).

2.3 National culture

National culture of the entrepreneur was selected as the independent variable whose effect upon adoption of effectuation will be tested.

Using the overarching theory, the national culture in this case will present a dichotomous variable, with values "tight" and "loose", each defined by the ecological and human-made challenges a certain culture is facing and the way it is addressing them via their societal institutions and practices (Gelfand et al., 2011).

A certain culture dealing with intense ecological and human-made difficulties will find itself in need of strong norms and strict punishment for deviance through laws, standards and norms, or , in other words a "tight" national culture, primarily established to enhance order and social coordination within it. Furthermore, the strength of these social norms can also be reflected within prevailing institutions and practices. Societies faced with major challenges are more likely to adopt and enforce stricter modes of behaviour and lack tolerance for deviance through their institutions due to circumstances not allowing room for it. On the other hand, societies not faced with such challenges are innately more likely to have more relaxed societal systems, allowing for more deviation from normal and thus forming what is known as "loose cultures" (Gelfand et al, 2011).

The following section aims to depict formative aspects of a national culture and further help explain how the classification between tight and loose cultures occurs.

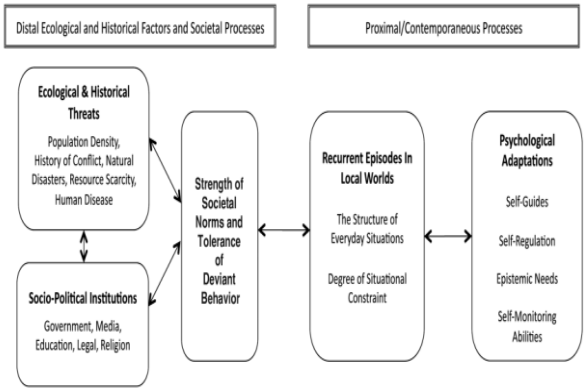

Figure 2. Formative aspects of a National Culture *(Gelfand, et al 2011. Differences Between Tight and Loose Cultures: A 33-Nation Study ;p1101)*

"Ecological & historical threats" pertain to population density, history of conflict, resource scarcity and disease, or put differently, the natural/historical threats that shape the current culture's immediate environment and corresponding policies that shape the range of permissible behaviour/ allowed deviation from the norm.

"The behaviour of socio-political institutions" relates to socialization and the width of permissible behaviour, as defined by relevant socio-political institutions. It is assessed based on questions relating to the government, media, legislature and monitoring wherein loose national cultures are expected to have a significant comparative advantage in freedom of expression over their tight counterparts, with a significantly lower amount of monitoring by the government and more relaxed legislature (Gelfand et al, 2011). The two aspects explained above jointly define "The Strength of Social Norms and Tolerance of Deviant Behaviour" within a culture, as explained through the ecological, historical and social processes.

Moving over to the remaining defining aspects of culture, we reflect on the "Recurrent episodes in local worlds", relating to the strength of everyday situations and the corresponding constraints originating from them. Namely, a culture constantly facing situations classified as "strong" will often see its members having their range of appropriate behaviour restricted with a high censoring potential, whereas "weak" situations are seen to place significantly fewer constraints on the actors, thus allowing for a wide range of appropriate behaviour and a higher degree of individual discretion.

Lastly, "Psychological adaptations" refer to the amount of self-regulation amongst individuals stemming from the close connection with the previously described strength of recurring situations. Galfand advocates that strong recurring situations on culture members impose a sentiment that their behavioural options are restricted and their actions subject to constant evaluation along with potential punishments, thus forming a need for self-regulatory , prevention focused guides and mechanisms - strongly represented within cultures classified as tight where members have the necessity to be cautious and dutiful, and vice versa for cultures classified as loose (Gelfand et al, 2011).

2.3 Hypotheses

The hypotheses for this research draw inspiration from the similarities between the characteristics of the two focal concepts , effectuation/causation and tight/loose cultures.

Namely, the freedom an entrepreneur possesses by adopting effectuation as the mode of behaviour, represented in the lack of planning, spontaneity, more autonomous decisions and more freedom in selection of resources can be connected to the comparatively high-level of freedom of expression, spontaneity and characteristics of the wide range of permissible behaviour that members of cultures classified as "loose" are enjoying (Chua, Roth, & Lemoine, 2015).

Conversely, as previously explained, causation is viewed as a process with clearly defined end goals (Sarasvathy, 2001) , thus implying a clear lack of freedom in decision making processes between the period of creating a venture and bringing it to its end goal. This rigid characteristic of causation can be seen to highlight a link between the similar lack of autonomous decisions, lack of freedom of choice and lack of spontaneity represented within members of tight cultures, as seen through restrictive law and norms and muffled freedom of expression/content for the sake of disallowing deviance (Gelfand et al, 2011).

This provides reasonable grounds to hypothesize that the entrepreneurs' social environment, and more specifically, characteristics of his national culture will be reflected in his choice of the default mode of entrepreneurial behaviour, whereas members of cultures classified as loose will be innately more likely to adopt the more similar approach - effectuation, and members of cultures classified as tight - causation.

Hypothesis 1 (H1) : *Entrepreneur members of cultures classified as "loose" will be innately more likely to adopt effectuation as the default mode of entrepreneurial behaviour.*

Hypothesis 2 (H2) : *Entrepreneur members of cultures classified as "tight" will be innately more likely to adopt causation as the default mode of entrepreneurial behaviour.*

3. METHODOLOGY

3.1 Data sample

In order to perform the research, data on a total of 518 entrepreneurs was collected via email in the form of a survey. Responses from a total of 381 entrepreneurs were validated for the research, while 137 was rejected due to missing information. 230 out 381 entrepreneurs were from the country/culture of South Africa, and 151 from the United States. The data was collected by the students of University of Twente in 2018 while performing the work on their bachelor and master theses.

An average respondent within the sample was male, aged 34, with a mean education level of 3.17 - representing a bachelor's degree. Additionally, for added relevance of the responses in relation to the entrepreneurship effectuation/causation scale, the sample consisted solely of professional entrepreneurs, in contrast to the sample of Gelfand et al., (Gelfand et al, 2011) which included students as well.

According to the annual global entrepreneurship index (Szerb, 2019), the United States ranked as a number one individual entrepreneurship ecosystem, while South Africa ranked 59th. The high contrast in rankings provided a reasonable ground to test the effect of tightness/looseness on entrepreneurship levels within the culture, and consequently, the adoption of either of the behavioural model approaches.

3.2 Data measures

3.2.1 Tightness/Looseness

In order to test the effect of national culture on the adoption of effectuation as the mode of entrepreneurial behaviour, both variables have to be reliably measured. In order to assign a value to the dichotomous variable "national culture" , it will be broken down and assessed according to the model developed by Gelfand (2011), expanded upon in the appendix. The validated scale consists of six items that assess aspects of national culture and utilizes a six-point Likert scale, later on combined and averaged as a total "tightness/looseness" score of a country, ultimately aiming to summarize the degree to which custom social norms are prevalent, defined and reliably imposed.

The answers provided by the multicultural entrepreneurs from the sample will range from one to six, whereas an answer of 1 will represent "Strongly Disagree" , and answer of 6 "Strongly Agree", with other answers including 2 - "Disagree" , 3 - "Slightly Disagree" , 4 - "Slightly Agree", and 5 - "Agree."

To summarize, in practice, an entrepreneur from the sample will be asked to assess a statement such as : "There is a wide range of social norms within the culture that I am expected to abide by." Each of the formative aspects, such as this one will be then given an individual score based on the interviewee's answer, then combinely averaged to provide a "tightness/looseness" of culture score for a specific national culture.

3.2.2 Effectuation/Causation

Once the "tightness/looseness" score for a culture has been defined, entrepreneurs from said cultures will be given a new set of questions based on a Likert scale where the task will now be to view which entrepreneurial mode of behaviour have they adopted in running their business / creating the entrepreneurial entity. In order to do that, interviewees will be posed a total of 10 questions using the scale adjusted by Alsos (Alsos et al., 2014), based on the 5 founding principles of each of the behavioural models, developed by Sarasvathy et al. (Sarasvathy, 2001; Wiltbank, Dew, Read, & Sarasvathy, 2006).

The answers will once again be assessed according to the six item Likert scale, whereas an answer of 1 will represent "Strongly Disagree" , and answer of 6 "Strongly Agree", with other answers including 2 - "Disagree" , 3 - "Slightly Disagree" , 4 - "Slightly Agree", and 5 - "Agree."

In practice, an interviewee providing answers in relation to "Effectuation" will be asked to assess a statement such as "Do you consider yourself goal-oriented ?", with an answer ranging from one to six. The higher mean average score for a group, between groups of items "Effectuation", and "Causation" , constituting of 5 questions each, will classify which behavioural model the entrepreneur/national culture is more likely to resort to.

Lastly, once that is known, it will be possible to conduct a linear regression investigating the relationship between concepts tight/loose culture and effectuation/causation, and establish whether there is a significant relationship between the type of national culture and the effectuation model of

behaviour being adopted, thus ultimately answering the research question and accepting/rejecting the hypothesis made.

3.3 Data analysis

In order to analyse the collected data and assess the relationship between the items from both "tightness/looseness" and "effectuation/causation" scales , exploratory factor analysis was conducted. The factor of rotation method used for the exploratory analysis was the varimax method, for the added clarity in interpretations of factors and applicability to the independent factors effectuation/causation (Field, 2009). As of the extraction method, a principal component analysis was conducted to further enhance the reliability of scales for the 10 items relating to effectuation/causation.

Due to Cronbach's alpha being considered the most common method of determining scale reliability (Field, 2013) , it was used for determining scale reliability in this research.

Cronbach's alpha for the scales resulted to be : Effectuation α = 0.774 (5 items) , Causation α = 0.571 (5 items), and Culture α = 0.667 (6 items). Comparing the results to the desired cutoff point score of Cronbach alpha at 0.7, we can conclude that scales used in the research are mostly reliable, with Causation α = 0.571 being under the threshold and Culture α = 0.667 being just slightly under the threshold as well. However, Cronbach's alpha values under the threshold are considered reliable enough provided the scales are based on a low number of items and the research is of exploratory nature (Gabrielsson & Politis, 2011), as is the case here.

To determine the sampling adequacy, Kaiser-Meyer-Olkin (KMO) and Bartlett's test for Sphericity were used. The sampling adequacy derived by testing each variable via the Kaiser-Meyer-Olkin test was 0.755, by definition considered good/adequate, as it is above the desired threshold of 0.7 (Loewen, Shawn, and Talip Gonulal, 2015).

Bartlett's test for Sphericity showed ($b = 763.791$, $df = 45$, $p < 0.001$), depicting a sufficient correlation between items ($p < \alpha$; $p < 0.05$). The results of both tests came out as significant, thus confirming the adequacy of the data for a factor analysis.

Furthermore, to investigate the reliability of the items themselves, communalities were used. Communalities help portrait the proportion of each variable's variance as represented in items. After extraction, our values ranged from 0.362 to 0.823 , with no particularly low values that would indicate subpar representation within the items. A total of three factors had an Eigenvalue above 1, cumulatively covering 57.26% of the total variance in the model by themselves. Hence, the three factors were extracted.

Lastly, in order to test the hypothesis expanded upon in the section 2.3 of the report, linear regression was conducted for the purpose of identifying the exact relation between the dependent and independent variables.

3.4 Control variables

Age, gender and education level were taken as control variables, or otherwise, additional factors that could have an effect on the dependent variable. The gender variable was recorded as a "dummy variable", with value 0 representing male and value of 1 representing female respondents.

A correlation analysis, at significance level α = 0.05, was conducted in order to determine whether there is a statistically significant relationship between either of the control variables and the dependent ones. The correlation between age and causation was considered not statistically significant ($r = 0.045$, $p = 0.377$), however significant and negative between age and effectuation ($r = -0.133$, $p = 0.009$).

Correlation between gender and causation was deemed statistically insignificant ($r = -0.095$, $p = 0.064$, while significant between gender and effectuation ($r = 0.133$, $p = 0.010$).

Lastly, the correlation between the education level and causation was determined to be statistically insignificant ($r = 0.089$, $p = 0.082$), while negative and significant between education level and effectuation ($r = -0.234$, $p < 0.001$).

4. RESULTS

Based on the descriptive statistics table on the sample of South Africa, and by comparing the Causation mean (mean = 5.07, SD = 0.89) against the Effectuation mean (mean = 3.86 , SD = 0.86), it can be observed that the respondents from South Africa do seem to have a tendency towards adopting the causation approach. This can also be reflected in the difference between means in the responses on items "Goal-oriented" (mean = 5.75, SD = 1.24) and "Means-oriented" (mean = 3.46 , SD = 2), where the entrepreneurs have displayed a clear tendency towards a formative construct of the causation approach.

Comparing the means of "predicting the uncertain future" (mean = 5.08, SD = 1.4) and "controlling the unpredictable future" (mean = 3.33 , SD = 1.92), it can be seen that the entrepreneurs from the sample tend to prefer thorough predicting and planning as opposed to controlling and by-shaping the future, thus once again pointing towards causation.

The difference in means between constructs "focusing on expected returns" (mean = 5.17, SD = 1.65) and "focusing on affordable loss" (mean = 4.54, SD = 1.77), as well as the difference between "focusing on competitive analysis" (mean = 5.58, SD = 1.36) and "focusing on commitments" (mean = 3.67, SD = 1.85) favourise causation-related constructs once again and therefore strengthen the claim that entrepreneurs from South Africa do seem to tend to adopt the causation approach as their mode of behaviour.

Interestingly, however, the difference in mean answers on items "focusing on exploiting contingencies" (mean = 4.31, SD = 1.81) versus "focusing on pre-existing knowledge" (mean = 3.80 , SD = 1.69) speaks otherwise, as the respondents have shown a preference for exploiting opportunities in real time, rather than planning them in advance - being a characteristic of the effectuation approach.

Looking at the data on "Culture mean" (mean = 3.64 , SD = 0.86), it can be observed that the mean answers on culture items, displayed in appendix 6.2, showcase a slight tendency for South African entrepreneurs to consider their national culture as "tight" , rather than "loose".

Focusing on descriptive statistics on the sample collected from the entrepreneurs originating from the United States, it can be seen that that the mean difference between values "Causation" (mean = 5.09 , SD = 0.86) and "Effectuation" (mean = 3.86, SD = 1.17) once again points towards the tendency to adopt the causation approach. Comparing individual item mean scores leads to the very same conclusion, except for once again in

items “focusing on exploiting contingencies” (mean = 4.64, SD = 1.6) versus “focusing on pre-existing knowledge” (mean = 3.77 , SD = 1.55) where entrepreneurs have displayed their favour towards the effectuation-related construct.

Lastly, looking at the value of “Culture” mean (mean = 3.74 , SD = 0.76), a slight inclination of US entrepreneurs to perceive their culture as “tight” can be observed.

The observations and findings from the descriptive statistics tables will be tested and validated in the hypothesis testing section, following the tests on normality and variance.

4.1 Tests of normality

Before testing the hypothesis, a Shapiro-Wilk’s test for normality was conducted in order to determine whether the variable distribution is normal.

The test showed that the culture items are normally distributed ($SW(381) = 0.994$, $p = 0.138$, while the effectuation ($SW(381) = 0.989$, $p = 0.005$, and causation ($SW(381) = 0.986$, $p = 0.001$ items were not. However, considering we are testing the normality of the variables individually, and since the Skewness value of variables is between the range of -2 and 2 , a variable can be accepted for the sake of proving normality (George & Mallery, 2010).

Therefore, as effectuation SE = 0.178 , and causation SE = -0.37, both variables are considered normally distributed, and moderately skewed.

Furthermore, observing the histogram plots for each of the scales, within both samples, it can be concluded that the data distribution can be classified as nearly normal in all cases, thus fulfilling the normality assumption necessary for linear regression to be significant.

4.2 Hypotheses testing

In order to validate and provide a conclusion in regards to the data obtained from the descriptive statistics, linear regression will be used to test the hypothesis of the research paper.

H1 : *Entrepreneur members of cultures classified as “loose” will be innately more likely to adopt effectuation as the default mode of entrepreneurial behaviour.*

In an effort to provide a conclusion in regards to the H1 hypothesis, the culture mean score for both nations first needs to be reflected on. South Africa scored 3.6 out of possible 6 on the culture variable, where a score of “1” would indicate a “loosest”, and a score of “6” a tightest culture. Due to the variable using a Likert scale consisting of six items, mean scores in the range between “3” and “4” will be considered to constitute cultures perceived as predominantly “neutral”. US respondents, however, have scored a mean score of 3.74 on the culture scale, thus indicating that the entrepreneurs from the US also perceive their culture as “neutral”, with a slight tendency towards “tight”. These results have been further validated by the conducted one way ANOVA test, with the difference between groups for the Culture scale having a significance level of $p = 0.242 > \alpha = 0.05$, thus confirming that there is no significant difference between the groups.

As such, since both groups from the sample perceive their culture as neutral towards tight, the hypothesis is not able to be tested due to the absence of a culture perceived as loose in the sample that our findings would be based upon. In order to reinstate this finding, linear regression was conducted between variables “culture” and “effectuation” for each of the groups. In both instances, the p value was particularly high, including $p = 0.898$ for the South Africa sample, and $p = 0.376$ for the US sample, thus rendering the linear regression in this particular case not-significant.

H2 : *Entrepreneur members of cultures classified as “tight” will be innately more likely to adopt causation as the default mode of entrepreneurial behaviour.*

In order to provide an answer to the second hypothesis, we once again reflect on the mean culture scores of the nations first, where it was established that entrepreneurs from both cultures predominantly perceive their cultures as neutral with a slight tendency towards tight.

An OLS linear regression model was constructed once again, this time for the variables “culture” and “causation” , for each of the nations respectively. The model based on the South Africa sample had a p value of $p = 0.028 < \alpha = 0.05$, while the model based on the US sample had a p value of $p < 0.001 < \alpha = 0.05$, thus satisfying the conditions for a reliable linear regression model in both cases.

Table 1: OLS Linear Regression – South Africa

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.529	.253		17.870	.000
	Gelfand culture tightness	.150	.068	.145	2.216	.028

a. Country = South Africa

b. Dependent Variable = Causation

Each of the instances displayed a positive linear relationship between the culture means classified as slightly tight and the causal entrepreneurship approach, showcasing that with every increase on the culture scale, causation score increases as well.

Therefore, as South Africa ($t = 2.216$, $\beta = 0.15$, $p = 0.028$), and US ($t = 3.947$, $\beta = 0.347$, $p < 0.001$) , we accept the H2 hypothesis and conclude that entrepreneurs perceiving their cultures as “tight” will be more likely to adopt causation as the default mode of entrepreneurial behaviour.

Table 2: OLS Linear Regression - USA

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.797	.335		11.330	.000
	Gelfand culture tightness	.347	.088	.308	3.947	.000

a. Country = USA

b. Dependent Variable = Causation

5. DISCUSSION

The aim of this study was to investigate and substantiate the effect different types of cultures have on the adoption of either of the entrepreneurial behaviour models from the perspective of an entrepreneur.

Reliability and adequacy of our data for the research was determined via Cronbach's alpha and Kaiser-Meier-Olkin (KMO) as well as Barlett's sphericity tests. While the results of KMO and Barlett's test proved satisfactory, validating the adequacy of the data, Cronbach's alpha for the causation scale and culture scale resulted to be 0.577 and 0.667, under the desired reliability cutoff point of 0.7. The Cronbach's alpha scores could be tied back to the conducted exploratory factor analysis and the factor loadings. The loadings under the value of 0.36 were supressed due to the lack of significance. By observing the output generated in the rotated component matrix, it can be noticed that the relationship, as represented by correlation, between effectuation items and effectuation as a component is significantly strong, while for causation that is the case only for four out of five items, thus explaining the value just under the threshold.

The results of the conducted descriptive analysis displayed that sampled entrepreneurs from both the US (culture mean = 3.74) and South Africa (culture mean = 3.64) perceive their culture as neutral, with a slight tendency towards tight. While Gelfand didn't use a sample from South Africa in his research, this study's findings on cultural tightness/looseness for the US are in line with what the scholar concluded (Gelfand, et al. 2011).

Continuing with the descriptive statistics, the initial results showed that entrepreneurs from both US and South Africa seem to be more adoptive of the causal decision making approach, with both countries, now identified as neutral towards tight, scoring significantly higher on the causation scale as compared to the effectuation scale. While this enables us to test and provide a conclusion to the second hypothesis - H2, H1 was unable to be tested as neither of the two cultures displayed a significant propensity towards the effectuation approach despite being perceived as predominantly neutral.

A possible reason for this can be found by observing the results of the correlation analysis conducted on the control variables. Namely, both the respondents' age and level of education proved to negatively correlate with effectuation being adopted as the entrepreneurial mode of behaviour. With our sample predominantly consisting of qualified, employed entrepreneurs, on average aged 34 and having a bachelor's degree, this could be one of the perpetrators in relation to effectuation not being resorted to. Interestingly, this contradicts the findings of (Sarasvathy, Dew, Read & Wiltbank, 2009) where expert entrepreneurs, unlike the ones from our sample, were concluded to gravitate more towards the effectual decision making processes. A potential cause of such results can be attributed to the previously mentioned organizational lock-in. As our respondents are predominantly professional, employed entrepreneurs, it can be argued that continuous processes within corporate working environments, aimed at constantly reproducing the desired status quo, known to hinder an individual's creativity (Hendgren, 2013) - term tightly related to the effectual approach, have lead towards an organizational lock-in instead, where future decisions will reflect previously over-repeated patterns, thus propelling the respondents to highlight the causal approach in their answers.

The sole construct that scored higher on the effectuation scale as compared to its causation scale counterpart, in both cases, was "contingencies" versus "pre-existing knowledge", where respondents stated that they rather exploit contingencies/opportunities instead of the pre-existing knowledge in operating their work, thus contradicting the general finding of this paper. Despite the scale being validated by Alsos (Alsos et al., 2014), by observing this pattern, although limited on a sample of only two nations within this research, it can be argued that the effectuation/causation scale fails to fully take into account one of the founding characteristics of an entrepreneur, based on three arguments. Namely, according to Sarasvathy (Sarasvathy et al., 2003), creation of future goods, services and markets is contingent on presence and identification of entrepreneurial opportunity first, that is on the entrepreneur to discover. Furthermore, the essential agent of entrepreneurship is an actor who seizes contingent opportunities and fulfills future aspirations by seizing them (Sarasvathy, 2001). This notion is further reinstated by Baron (Baron, 2006.), stating that an entrepreneur can be characterized as simply, an individual which turns opportunities into money. Therefore, as our sample consists exclusively of entrepreneurs, it should come at no surprise they pointed towards one of the entrepreneurships' founding principles in their answers by opting out for relying on contingencies/opportunities over the pre-existing knowledge within their respective working environments.

Lastly, it is interesting to note that respondents from both samples perceive their culture as predominantly neutral towards tight. Considering the fact that US is one of the world's leading forces in context of fostering innovation and entrepreneurship (Nelson, 1993.), one could be free to assume more propensity towards the classification of a "loose" culture coming from US respondents, conceptually resonating more with the terms "innovation" and "entrepreneurship" due to the freedom of expression and thought members of such cultures are enjoying. This, however, was not the case in this study, as both the countries scored relatively the same on the culture scale.

6. CONCLUSION

To conclude, the primary research question of this study was "To what extent can the effects of tight/loose cultures be seen on the adoption of effectuation/causation behavioural approaches of an entrepreneur ?", with an aim to substantiate the effect each of the two culture types has on the adoption of either of the entrepreneurship approaches.

The study draws from the initial discussion on the necessity of planning in today's business environments (Ansoff, 1991; Mintzberg and Waters, 1985; Porter, 1985), where it aims to provide an answer to whether the adoption of the effectual mode of entrepreneurial behaviour, an approach fundamentally opposite to the one of planning, would enable better management of the business entity, considering the speed of change and pace of innovation in the current business environments. Due to the resemblance between the concepts "loose culture" and "effectuation" expanded upon in section 2.3 of the report, it was hypothesized that the antecedent of entrepreneurs resorting to effectuation as their mode of behaviour would be the presence of a "loose" culture enabling them to develop the said approach via the freedom of expression and creativity they enjoy within it. Therefore, the

report theorized and aimed to provide an answer to whether some entrepreneurs are innately better equipped to steer their business venture in today's business environments by belonging to cultures classified as loose.

The research is rendered inconclusive in this regard. As neither of the samples perceived their culture as loose, or neutral towards loose, the relationship between loose cultures and adoption of effectuation could not be reliably established. Therefore, H1 - "Entrepreneur members of cultures classified as "loose" will be innately more likely to adopt effectuation as the default mode of entrepreneurial behaviour" had to be discarded.

On another note, the study was able to provide an answer to H2 - "Entrepreneur members of cultures classified as "tight" will be innately more likely to adopt causation as the default mode of entrepreneurial behaviour." , and establish a relationship between cultures perceived as tight, in this case propense towards tight, and the causal decision making approach. As respondents from both samples perceived their culture as neutral towards tight and displayed a clear tendency for adopting the causal approach, seen in their explicit favour of four out of five causation items versus their effectuation counterparts, a positive relationship between cultures perceived as tight and adopting the causal decision making approach was concluded.

7. LIMITATIONS AND FURTHER RESEARCH

As previously discussed, some aspects of the study remained inconclusive. This can be attributed to limitations within the data. In order to provide a concrete answer to the research question posed and substantiate the general relationship between the two types of culture and the adoption of either decision making approaches in context of entrepreneurship, a larger sample consisting of more countries, including multiple instances of each culture type, is required. Moreover, the sampled entrepreneurs perceived their culture as neither loose or tight, but rather predominantly neutral towards tight instead. For increased relevance and accuracy of the results, it is desirable for the culture classification to be as close to either of the extremes as possible. This could be achieved through providing more context along with the questions posed, via in depth explanations of what each of the questions entails.

Furthermore, the results displayed that one of the items from the effectuation/causation scales does not seem to be affected by the perceived culture type. In each of the instances and despite both cultures being classified as predominantly neutral towards tight, the only non-causation item respondents opted for was "exploiting contingencies" versus "exploiting pre-existing knowledge". As pointed out previously, an entrepreneur is considered a person that turns opportunities into money (Baron, 2006). A comprehensive research on underlying psychological models that affect the identification of opportunities for an individual could be conducted, with an intent not only to contribute by hypothesizing on another antecedent of entrepreneurship, but also help further establish whether an entrepreneur at heart "remains an entrepreneur" by opting for exploiting contingencies/opportunities regardless of the type of culture he is a part of.

Gregoire and Cherchem (Grégoire & Cherchem 2019) have been seen to investigate an interesting topic of antecedents that lead towards the adoption of effectuation approach amongst entrepreneurs. Even though this study remains inconclusive in regards to effectuation, it does highlight a link between the type of national culture and the entrepreneurial mode of behaviour adopted. Therefore, it would be interesting to see further, more conclusive research comprising of a larger sample of countries, on the role of national culture in the context of type of decision making used, especially in relation to effectuation, in hopes of providing a more definite conclusion on its antecedents and consequently a better understanding of the currently vague concept as a whole.

Lastly, one of the major limiting factors for this particular research was the recent global pandemic , marked by the outbreak of the Covid-19 virus. This resulted in major disruptions worldwide, significantly affecting the availability of potential respondents and directly limiting the sample size used. Moreover, face-to-face contact was completely restricted, fully constraining physical interviews and face-to-face meetings, ensuing rapid adaptation of all parties involved to new, online methods of consulting, communicating and conducting work.

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10. APPENDIX

10.1 *Survey Items – Culture Tightness/Looseness*

Approach	Item	Coding
Tight or Loose Culture	1.There are many social norms that people are supposed to abide in this country.	1 = very loose culture; 6= very tight culture
	2. In this country, there are very clear expectations for how people should act in most situations.	1 = very loose culture; 6= very tight culture
	3. People agree upon what behaviors are appropriate versus inappropriate in most situations in this country.	1 = very loose culture; 6= very tight culture
	4. People in this country have a great deal of freedom in deciding how they want to behave in most situations	1 = very tight culture; 6= very loose culture **(reverse coded)**
	5. In this country, if someone acts in an inappropriate way, others will strongly disapprove.	1 = very loose culture; 6= very tight culture
	6. People in this country almost always comply with social norms.	1 = very loose culture; 6= very tight culture

10.2 *Control Variables*

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
CV_Age	381	18	74	34.06	11.093
CV_Gender	381	0	1	.27	.446
CV_Degree	381	1	6	3.17	1.306
Valid N (listwise)	381				

10.3 *Cronbach's Alpha – Scale Reliability*

10.3.1 *Cronbach's Alpha – Effectuation Items*

Case Processing Summary

		N	%
Cases	Valid	381	73.6
	Excluded[a]	137	26.4
	Total	518	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.776	5

10.3.2 *Cronbach's Alpha – Causation Items*

Case Processing Summary

		N	%
Cases	Valid	381	73.6
	Excluded[a]	137	26.4
	Total	518	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.571	5

10.3.3 *Cronbach's Alpha – Culture Items*

Case Processing Summary

		N	%
Cases	Valid	381	73.6
	Excluded[a]	137	26.4
	Total	518	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.667	6

10.4 Exploratory Factor Analysis

10.4.1 Kaiser Meyer Olkin (KMO) test and Barlett's Sphericity test

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.755
Bartlett's Test of Sphericity	Approx. Chi-Square	763.791
	df	45
	Sig.	.000

10.4.2 Communalities, Component Matrix, Rotated Component Matrix

Communalities

	Initial	Extraction
Goal-oriented	1.000	.362
Expected returns	1.000	.466
Pre-existing knowledge	1.000	.823
Competitive analysis	1.000	.634
Uncertain future	1.000	.591
Means-oriented	1.000	.666
Affordable loss	1.000	.483
Contingencies	1.000	.644
Commitments	1.000	.420
Unpredictable future	1.000	.638

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component		
	1	2	3
Goal-oriented	-.501		
Expected returns		.597	
Pre-existing knowledge			.859
Competitive analysis		.693	
Uncertain future	-.434	.628	
Means-oriented	.722		
Affordable loss	.592		
Contingencies	.684		
Commitments	.602		
Unpredictable future	.774		

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Rotated Component Matrix[a]

	Component		
	1	2	3
Goal-oriented		.442	
Expected returns		.663	
Pre-existing knowledge			.899
Competitive analysis		.780	
Uncertain future		.757	
Means-oriented	.803		
Affordable loss	.625		
Contingencies	.747		

Commitments	.625		
Unpredictable future	.782		

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 4 iterations.

Component Transformation Matrix

Component	1	2	3
1	.897	-.415	-.154
2	.434	.892	.123
3	.086	-.177	.980

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

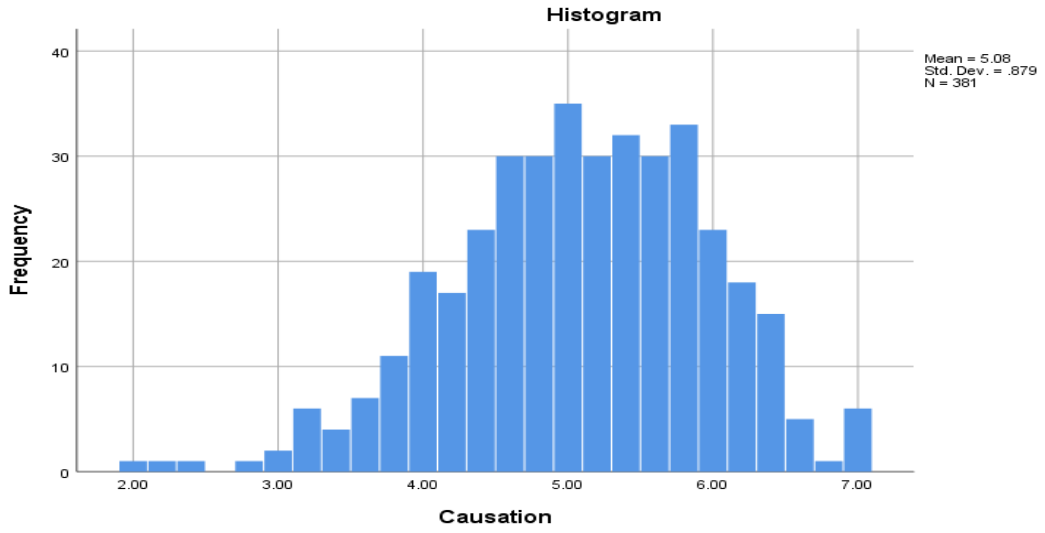
Total Variance Explained

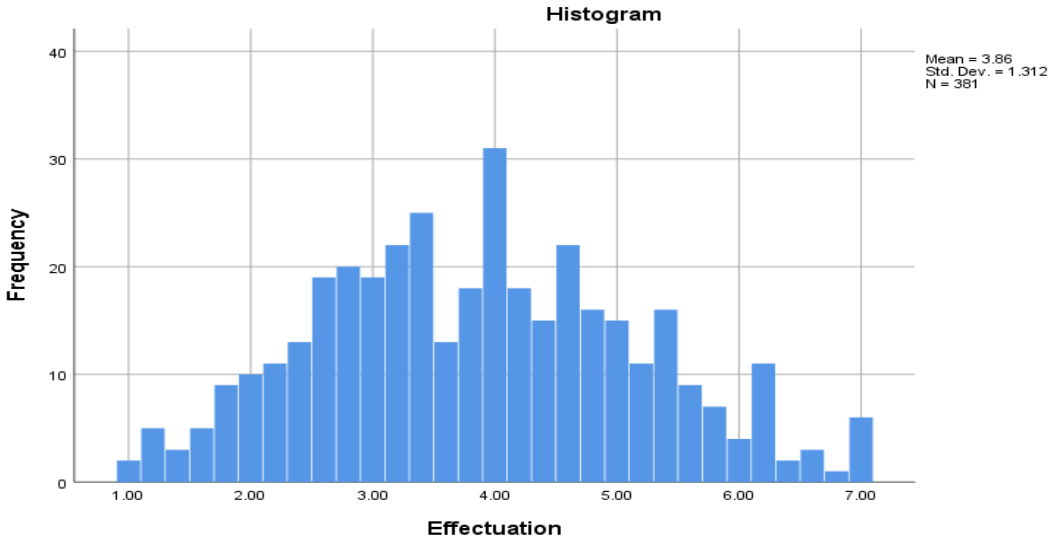
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.963	29.626	29.626	2.963	29.626	29.626	2.709	27.090	27.090
2	1.692	16.917	46.544	1.692	16.917	46.544	1.891	18.911	46.001
3	1.072	10.725	57.268	1.072	10.725	57.268	1.127	11.267	57.268
4	.863	8.634	65.903						
5	.795	7.948	73.851						
6	.647	6.465	80.316						
7	.598	5.977	86.293						
8	.520	5.204	91.497						
9	.489	4.891	96.389						
10	.361	3.611	100.000						

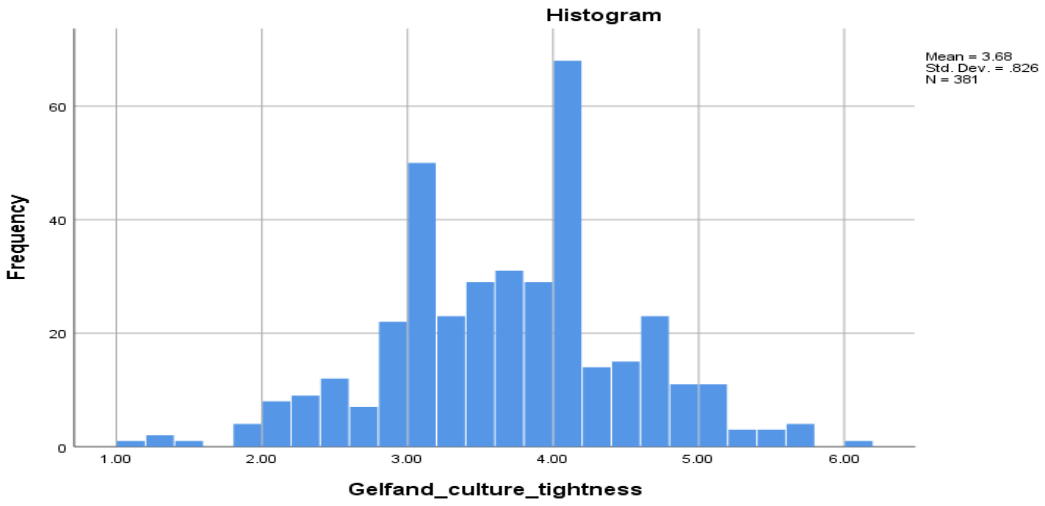
10.5 ***Shapiro Wilk's Test of Normality***

	Shapiro-Wilk		
	Statistic	df	Sig.
Causation	.986	381	.001
Effectuation	.989	381	.005
Gelfand culture tightness	.994	381	.138

Causation	Mean		5.0824	.04505
	95% Confidence Interval for Mean	Lower Bound	4.9938	
		Upper Bound	5.1710	
	5% Trimmed Mean		5.1044	
	Median		5.2000	
	Variance		.773	
	Std. Deviation		.87937	
	Minimum		2.00	
	Maximum		7.00	
	Range		5.00	
	Interquartile Range		1.20	
	Skewness		-.370	.125
	Kurtosis		.138	.249
Effectuation	Mean		3.8625	.06724
	95% Confidence Interval for Mean	Lower Bound	3.7303	
		Upper Bound	3.9947	
	5% Trimmed Mean		3.8466	
	Median		3.8000	
	Variance		1.723	
	Std. Deviation		1.31244	
	Minimum		1.00	
	Maximum		7.00	
	Range		6.00	
	Interquartile Range		2.00	
	Skewness		.178	.125
	Kurtosis		-.489	.249
Gelfand culture tightness	Mean		3.6786	.04232
	95% Confidence Interval for Mean	Lower Bound	3.5953	
		Upper Bound	3.7618	
	5% Trimmed Mean		3.6828	
	Median		3.6700	
	Variance		.682	
	Std. Deviation		.82610	
	Minimum		1.00	
	Maximum		6.00	
	Range		5.00	
	Interquartile Range		1.00	
	Skewness		-.111	.125
	Kurtosis		.146	.249


Histogram
Mean = 5.08
Std. Dev. = .879
N = 381
Frequency
Causation


Histogram
Mean = 3.86
Std. Dev. = 1.312
N = 381
Frequency
Effectuation


Histogram
Mean = 3.68
Std. Dev. = .826
N = 381
Frequency
Gelfand_culture_tightness

10.6 Descriptive Statistics

Descriptive Statistics - USA

	N	Minimum	Maximum	Mean	Std. Deviation
Goal-oriented	151	1	7	5.61	1.311
Expected returns	151	1	7	5.25	1.510
Pre-existing knowledge	151	1	7	3.77	1.546
Competitive analysis	151	2	7	5.75	1.227
Uncertain future	151	2	7	5.08	1.398
Means-oriented	151	1	7	3.59	1.870
Affordable loss	151	1	7	4.09	1.589
Contingencies	151	1	7	4.64	1.598
Commitments	151	1	7	3.93	1.676
Unpredictable future	151	1	7	3.05	1.735
Gelfand_1_Culture [There are many social norms that people are supposed to abide by in this country.]	151	1	6	4.50	1.326
Gelfand_2_Culture [People agree upon what behaviors are appropriate versus inappropriate in most situations in this country.]	151	1	6	4.14	1.322
Gelfand_3_Culture [In this country, there are very clear expectations for how people should act in most situations.]	151	1	6	3.80	1.371
Gelfand_4_rev	151	1.00	6.00	2.3974	1.39082
Gelfand_5_Culture [In this country, if someone acts in an inappropriate way, others will strongly disapprove.]	151	1	6	4.16	1.291
Gelfand_6_Culture [People in this country almost always comply with social norms.]	151	1	6	3.44	1.279
Causation	151	3.20	7.00	5.0927	.85846
Effectuation	151	1.40	6.60	3.8609	1.16733
Gelfand_culture_tightness	151	1.33	5.67	3.7397	.76203
Country	151	2.00	2.00	2.0000	.00000
CV_Age	151	19	65	33.07	11.711
CV_Gender	151	0	1	.32	.467

CV_Degree	151	1	5	3.17	1.193
Valid N (listwise)	151				

Descriptive Statistics - South Africa

	N	Minimum	Maximum	Mean	Std. Deviation
Goal-oriented	230	1	7	5.75	1.242
Expected returns	230	1	7	5.17	1.652
Pre-existing knowledge	230	1	7	3.80	1.692
Competitive analysis	230	1	7	5.58	1.364
Uncertain future	230	1	7	5.08	1.395
Means-oriented	230	1	7	3.46	2.003
Affordable loss	230	1	7	4.54	1.767
Contingencies	230	1	7	4.31	1.811
Commitments	230	1	7	3.67	1.846
Unpredictable future	230	1	7	3.33	1.917
Gelfand_1_Culture [There are many social norms that people are supposed to abide by in this country.]	230	1	6	4.20	1.336
Gelfand_2_Culture [People agree upon what behaviors are appropriate versus inappropriate in most situations in this country.]	230	1	6	3.78	1.404
Gelfand_3_Culture [In this country, there are very clear expectations for how people should act in most situations.]	230	1	6	3.70	1.384
Gelfand_4_rev	230	1.00	6.00	2.7913	1.34454
Gelfand_5_Culture [In this country, if someone acts in an inappropriate way, others will strongly disapprove.]	230	1	6	4.05	1.306
Gelfand_6_Culture [People in this country almost always comply with social norms.]	230	1	6	3.31	1.337
Causation	230	2.00	7.00	5.0757	.89463
Effectuation	230	1.00	7.00	3.8635	1.40205
Gelfand_culture_tightness	230	1.00	6.00	3.6384	.86486
Country	230	1.00	1.00	1.0000	.00000
CV_Age	230	18	74	34.71	10.643

CV_Gender	230	0	1	.24	.430
CV_Degree	230	1	6	3.17	1.378
Valid N (listwise)	230				

10.7 Correlation Analysis

Correlations

		CV_Age	CV_Gender	CV_Degree	Causation	Effectuation	Gelfand culture tightness
CV_Age	Pearson Correlation	1	.049	.146**	.045	-.133**	-.082
	Sig. (2-tailed)		.337	.004	.377	.009	.109
	N	381	381	381	381	381	381
CV_Gender	Pearson Correlation	.049	1	-.059	-.095	.133**	.009
	Sig. (2-tailed)	.337		.252	.064	.010	.860
	N	381	381	381	381	381	381
CV_Degree	Pearson Correlation	.146**	-.059	1	.089	-.160**	.031
	Sig. (2-tailed)	.004	.252		.082	.002	.552
	N	381	381	381	381	381	381
Causation	Pearson Correlation	.045	-.095	.089	1	-.234**	.203**
	Sig. (2-tailed)	.377	.064	.082		.000	.000
	N	381	381	381	381	381	381
Effectuation	Pearson Correlation	-.133**	.133**	-.160**	-.234**	1	.018
	Sig. (2-tailed)	.009	.010	.002	.000		.730
	N	381	381	381	381	381	381
Gelfand culture tightness	Pearson Correlation	-.082	.009	.031	.203**	.018	1
	Sig. (2-tailed)	.109	.860	.552	.000	.730	
	N	381	381	381	381	381	381

10.8 OLS Linear Regression

10.8.1 Hypothesis 1 – South Africa

Model Summary[a]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.008[b]	.000	-.004	1.40507

a. Country = South Africa

b. Predictors: (Constant), Gelfand_culture_tightness

ANOVA[a,b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.032	1	.032	.016	.898[c]
	Residual	450.121	228	1.974		
	Total	450.153	229			

a. Country = South Africa

b. Dependent Variable: Effectuation

c. Predictors: (Constant), Gelfand_culture_tightness

Coefficients[a,b]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.913	.401		9.748	.000
	Gelfand culture tightness	-.014	.107	-.008	-.128	.898

a. Country = South Africa

b. Dependent Variable: Effectuation

10.8.2 Hypothesis 1 – USA

Model Summary[a]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.073[b]	.005	-.001	1.16816

a. Country = USA

b. Predictors: (Constant), Gelfand_culture_tightness

ANOVA[a,b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.075	1	1.075	.787	.376[c]
	Residual	203.325	149	1.365		
	Total	204.399	150			

a. Country = USA

b. Dependent Variable: Effectuation

c. Predictors: (Constant), Gelfand_culture_tightness

Coefficients[a,b]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.446	.478		7.214	.000
	Gelfand culture tightness	.111	.125	.073	.887	.376

a. Country = USA

b. Dependent Variable: Effectuation

10.8.3 Hypothesis 2 – South Africa

Model Summary[a]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.145[b]	.021	.017	.88709

a. Country = South Africa

b. Predictors: (Constant), Gelfand_culture_tightness

ANOVA[a,b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.864	1	3.864	4.910	.028[c]
	Residual	179.420	228	.787		
	Total	183.284	229			

a. Country = South Africa

b. Dependent Variable: Causation

c. Predictors: (Constant), Gelfand_culture_tightness

Coefficients[a,b]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.529	.253		17.870	.000
	Gelfand culture tightness	.150	.068	.145	2.216	.028

a. Country = South Africa

b. Dependent Variable: Causation

10.8.4 Hypothesis 2 – USA

Model Summary[a]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.308[b]	.095	.089	.81956

a. Country = USA

b. Predictors: (Constant), Gelfand_culture_tightness

ANOVA[a,b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.462	1	10.462	15.576	.000[c]
	Residual	100.080	149	.672		
	Total	110.542	150			

a. Country = USA

b. Dependent Variable: Causation

c. Predictors: (Constant), Gelfand_culture_tightness

Coefficients[a,b]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.797	.335		11.330	.000
	Gelfand culture tightness	.347	.088	.308	3.947	.000

a. Country = USA

b. Dependent Variable: Causation