

# **Mirror, Mirror on the Wall: The Intergroup Bias and Access to Venture Financing**

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## **Abstract**

Access to financing is a critical step in enabling economic growth. Ensuring that capital is allocated between ventures in an optimal way is of great importance to society. Investors look at several factors when determining whether to pursue a business opportunity, amongst them the business proposition, industry landscape and team experience. In this paper we show that investment decisions are not wholly based on rational evaluations but are also impacted by mental biases related to the perceived social identity of the investors and social norms around investment behaviour. Our results show that a group of investors with the same university education prefer entrepreneurs that share the same educational background instead of entrepreneurs from a different university. Furthermore, we show that investors' evaluations become even more biased towards the group they identify themselves with when presented with unethical business opportunities. This is shown by greater differences in relative perceptions between the ethical and unethical business pitches. We argue that these results can be explained by individuals' desire to enhance their self-esteem and by the norms created by perceived behaviour within the social group they identify with.

**Keywords:** Behavioural finance, venture capital, investment biases, social identity theory, social norms theory

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**Table of contents**

1. Introduction	3
2. Literature overview	5
3. Hypotheses	6
4. Brief results	7
5. Theoretical framework	7
a) Traditional finance	7
b) Social identity theory	7
c) Ethicality and decision making	11
d) Contribution to existing research	12
6. Data and methodology	12
a) Experiment methodology introduction	12
b) Participants	13
c) Procedure and experiment design	13
d) Survey design	15
e) Saliency	15
f) Statistical method	15
g) Variables	16
h) Control group	17
i) Data limitations	17
7. Results and analysis	18
a) Results: Hypothesis 1 and 2	18
b) Analysis: Does an intergroup bias exist and if so, why does it arise?	23
c) Results: Hypothesis 3	25
d) Analysis: Why is there a larger difference in perception of the business opportunities in the unethical condition when compared to the ethical condition?	25
8. Discussion	28
a) How can this behaviour be addressed?	28
b) Further studies	29
9. Conclusion	30
10. References	32
11. Appendix	35

## **1. Introduction**

Of all venture capital invested in Sweden in 2017, 88% was allocated to companies with completely male founding teams (DI Digital, 2018). The same study found that less than 1% went to companies founded by females only. Other studies have shown similar findings. In a recent paper published in Harvard Business Review (Johansson et. al, 2018), it was found that women-owned businesses receive only 7% of government venture financing, while roughly a third of Swedish businesses are women-owned. The same study analysed metrics such as growth in number of employees, debt-to-equity ratio, return on total capital, profit margin and earnings before interest and tax and found that no significant difference in the metrics could be observed between the female and male founding teams. If male founders do not perform better, it seems at odds with traditional finance theories that they receive larger proportions of venture capital. This would suggest that venture capital is currently being allocated inefficiently. To understand the reasons behind this inefficient allocation of venture capital one can look to behavioural finance research for explanations.

Behavioural finance is an area where economists and psychologists meet to explore the occurrence of financial decisions that deviate from traditional finance assumptions. It is a subject that has been growing in prominence, highlighted by the fact that the 2017 Nobel Prize in Economics was awarded to Professor Richard Thaler for his key role in behavioural finance research. This paper aims to add to behavioural finance research about biases that impact investment decision making, focusing on venture capital investing. It considers group identity and examines if in-group favouritism and out-group prejudice can be observed in venture financing. In-group biases can be based on any form of group belonging such as a sports team (Levine et. al, 2005), ethnicity (Lapinski et. al, 2001) or as we will argue in this study, educational background.

In a joint Harvard and MIT experiment performed by Brooks et. al (2014), identical business proposals were presented to a group of venture capitalists. The only difference was that the pitches presented to the venture capitalists were narrated by either a female or a male voice. Even though the content was identical, the study found a consistent and significant difference in perception based on gender. Almost 70% of the participants chose to invest in the ventures presented by a male voice compared with 30% if the pitcher's voice was female. Using a similar experiment to the study performed by the Harvard and MIT researchers, our objective is to investigate the in-group bias in an investment setting. This study has two areas of focus. Firstly, the experiment examines the effect that social identity (Tajfel and Turner, 1979) has on investors' ability to evaluate business proposals. Secondly, the experiment explores if investors' ability to evaluate business opportunities differs when comparing an ethical business idea with an unethical idea. This research area is important because it has a direct impact on companies' ability to access financing needed to develop and grow. Access to capital together with innovation and entrepreneurship are closely

linked with job creation, economic growth and prosperity in society. With growing global financial inequality and a fierce debate over why certain groups in society appear to be at a systematic advantage financially, we believe that it is of great interest to investigate the relationship between financial decision making and biases, by explaining some observed investment patterns in the financial community.

The existence of the in-group-out-group bias in decision making has been highlighted in different contexts throughout the past few years and the studies referred to earlier suggest that certain groups receive more financing because of this bias. In the context of recruitment, it was recently highlighted in a report that the gender composition and recruitment of boards of directors in Sweden was skewed in men's favour (AllBright, 2018). In 2015, the Oscars Film Awards was criticized for nominating predominantly white candidates (Vanity Fair, 2018). The consequences of homogenous groups making decisions affected by in-group favouritism evidently has broad and observable implications, from skewed allocation of capital, to inequality within corporate boards, to a narrow group of people winning media awards.

The in-group-out-group bias stems from social identity theory, developed by Henri Tajfel in the late 1970's. As highlighted, it evidently has far reaching consequences. However, its effects within finance with regards to investment decisions remain relatively unexplored. The aim of this thesis and experiment is to use social identity theory and social norms theory to investigate the consequences of the in-group-out-group bias on investment decision making. Traditional finance theories assume that markets are efficient and a foundation for that claim is that investors make use of all available information. This should result in an efficient allocation of resources and thus, investment opportunities should be funded according to their true value. If there is a bias towards in-group members when evaluating business proposals resulting in disproportionate amounts of investing, a market dysfunction has taken place. Combining a finance and morality viewpoint, if ideas that are ethical and sustainable are not funded while ideas that are unethical and unsustainable are financed, a suboptimal allocation of resources has occurred.

Of further interest is to investigate if investors evaluate ideas differently when comparing ethical and unethical investment opportunities. Gino et al. in their research article "Contagion and Differentiation in Unethical Behaviour: The Effect of One Bad Apple on the Barrel" (2009) showed that the in-group-out-group status of an unethical confederate affects the level of ethical behaviour within a group. They demonstrate that the educational affiliation of an individual can serve as a social identity to create an in-group-out-group bias. Inspired by their research, we are interested in investigating how the level of ethicality in financial decision making is impacted by the in-group-out-group bias. We will investigate this by exposing a group of participants to ethical and unethical business ideas framed as though they come from a certain university. We will then expose another group of participants to the same ethical and unethical business ideas but framed as though they come from a different university.

Thus, this study aims to answer the following research question:

*To what extent are group-based distinctions founded on the social identity of university belongingness predictors of access to venture funding, and how is this affected in the context of ethical and unethical decision making?*

## **2. Literature overview**

Understanding biases in financial decision making is important because it helps explain investor behaviour. This paper will add to the investment bias taxonomy by considering social identity theory, first formulated by Henri Tajfel (1979), and social norms theory, developed by H.W Perkins and A.D Berkowitz (1986), and how these theories can be combined to explain investment behaviour. In this paper we will use the terms “in-group-out-group bias” and “intergroup bias” interchangeably.

Social identity is concerned with the characteristics of the groups to which one belongs while personal identity looks at an individual's characteristics. The central hypothesis of social identity theory states that group members belonging to the so called “in-group” will search for positive aspects of other in-group members in order to enhance their own self-image. Likewise, they attempt to distance themselves and find faults in the so called “out-group” members to enhance their own self-image. Social identity theory holds that humans act automatically based on existing internalized perceptions when a specific social identity becomes salient. For example, a study found that football fans were more likely to help a person in need if that person was wearing the jersey of the team that they supported and were less likely to help a person in need if that person wore a rival team jersey (Levine et. al, 2005). Another example of the effects of this bias can be found in a judicial context. Research has been performed on how juries' decision-making process is influenced by the in-group-out-group bias. The experiment found the juries assigned longer prison sentences to a defendant that was not a member of the participant's ethnic group (Lapinski et. al, 2001).

Social norms theory aims to explain how behaviour is affected by peer influence and the environment around an individual. The theory holds that the actions of one's peers and changes in the surrounding environment can impact a person's behaviour. According to social norms theory, people can misperceive the actual norms of the social group they identify with. This inaccurate approximation of the norms of a group results in people altering their behaviour in potentially irrational ways. This experiment will focus largely on ethical and unethical behaviour and in this context, the theory argues that overestimations of the level of unethical behaviour amongst peers will lead us to act more unethically. Reversely, underestimations of the level of unethical behaviour amongst peers will lead us to act less unethically.

To summarize, we aim to use social identity theory and social norms theory to explain investment behaviour. We believe that the in-group-out-group bias in combination with theories on social norms can account for observed deviations in behaviour from the predictions of traditional finance theories.

### **3. Hypotheses**

Based on previous research and the examples highlighted above we expect to see clear in-group favouritism and a higher willingness to invest in the in-group investment opportunities compared to the out-group investment opportunities. In addition, we anticipate that in-group members will perceive the unethical business idea as relatively more ethical when it is presented by another in-group member than when it is presented by an out-group member. The following hypotheses have been formulated:

**H1:** In the evaluation of the investment proposals, the investors will prefer the pitches presented by an in-group member. Investors will be more positively inclined to the in-group investment pitch than the out-group investment pitch, independent of if the opportunity is ethical or unethical.

**H2:** In-group members will tend to invest more in business proposals presented by an in-group member. More hypothetical capital will be allocated to the in-group pitches compared with the out-group pitches, both for the ethical and unethical business ideas.

**H3:** The difference in perception of the investment opportunities will be significantly larger between the in-group and out-group unethical opportunity than the in-group and out-group ethical opportunity. The investors will be significantly more positive to the in-group unethical opportunity than the out-group unethical opportunity when compared with the results found in the ethical condition.

Ultimately, if these hypotheses can be proven, it could mean that in-group members have better access to finance and that the in-group-out-group bias is prevalent. From a broader societal perspective this could be problematic if there is a dominant group that makes up a large part of the investment community.

### **4. Brief results**

The results of this experiment supported all of the hypotheses stated above. The in-group participants gave higher scores and were more inclined to invest when the material was presented in the in-group conditions. The tendency of in-group members to prefer the material presented in the in-group condition was also

visible in the absolute amounts that the participants chose to invest in the experiment, meaning that the second hypothesis was also supported by the findings of this experiment. As anticipated, the control group gave neutral results for both the in-group and out-group conditions indicating that there was no significant difference between the presentations. The first hypothesis could not be proven with statistical significance for the ethical business proposal. However, for the unethical business idea the hypothesis was proven with statistical significance indicating that in-group favouritism is even stronger when the content is controversial, supporting the third hypotheses. These results suggest that investor behaviour can potentially be explained by the in-group-out-group bias and that their decisions become even more subjective as business opportunities become relatively more unethical.

## **5. Theoretical framework**

### **a. Traditional finance**

Traditional finance builds on four main assumptions (Berk and DeMarzo, 2013). Firstly, investors are assumed to be rational. Secondly, expected returns are assumed to be a function of risk, this is known as expected utility theory. Thirdly, it is assumed that investors should design their portfolios according to the rules of the mean-variance portfolio theory. Finally, the efficient market hypothesis assumes that markets are efficient.

Looking across the broad spectrum of empirical results of behavioural finance research one can conclude that these assumptions do not hold in the real world. Firstly, these studies find that investors can be described as “normal”, meaning that they act rationally sometimes and impulsively in other situations. Secondly, expected returns are shown to be determined by more than just risk. Thirdly, investors often design their portfolios according to behavioural biases instead of according to modern portfolio theory. Finally, markets are found to be inefficient. With these findings it is interesting to investigate deeper and examine what causes these deviations from traditional finance theories to occur.

### **b. Social identity theory**

Henri Tajfel is seen as the founding force behind social identity theory. In a series of papers, he proposed that social identification with a group provides us with normative beliefs, attitudes and behaviours. Tajfel defines social identity as a person's sense of who they are based on the groups that they belong to (1979). Turner, another prominent social psychologist who worked closely with Tajfel, defines a group as “a collection of people who share the same social category membership. A member of a psychological group does not need to interact with or like other members or be liked or accepted by them. It is his or her perception of being... (a member of that group) that is the basis for incorporation of that status into his or her social identity” (Ashforth and Mael, 1989). In accordance with this, social identity theory holds that

people's self-esteem is affected by the status of the group or groups to which they belong, and people can increase their self-image by holding prejudiced views against members of an out-group. There are three central processes within social identity theory; social categorization, social identification and social comparison (McLeod, 2008).

Through social categorization, people divide the world into an in-group (us) and an out-group (them). Henri Tajfel argues that this process of categorizing people into groups is based on a normal cognitive process, namely the tendency to group things together, commonly referred to as stereotyping. Turner and Tajfel state that the process of categorization enables the individual to undertake many forms of social action as well as provides a system of orientation for self-reference, it "creates and defines the individual's place in society" (1986).

Social identification is a process where individuals identify which group they belong to. Subsequently, this process leads to an automatic classification of which groups that can be defined as out-groups. Within social identification an important cognitive process known as depersonalization occurs. This is a process by which individuals see themselves as an in-group prototype, a cognitive representation of the social category to which they belong, containing the meanings and norms that the person associates with the social category (Hogg et al. 1995) rather than seeing themselves as a unique individual (Turner et al. 1987). Depersonalization occurs when the activation of a social identity takes place. The process of depersonalization indicates two important aspects of membership in any social group; one's identification with a category and the behaviours that we associate with that category.

The final process is social comparison. Having categorized the different groups and identified with a group, individuals will tend to compare these groups to each other. Social identity theory argues that in order to maintain our self-esteem, our group must compare favourably with other groups.

These processes collectively describe the core processes and implications of social identity theory. As a result, people tend to exaggerate the differences between groups, and exaggerate the similarities of things in the same group. Thus, people see the group to which they belong, the in-group, as being different from others, the out-group, and the members of a group as more similar than they in fact are. This is known as in-group favouritism or the in-group-out-group bias, which is the pattern of favouring members of one's in-group over out-group members. The desire to enhance self-esteem by viewing one's self positively is transferred onto the group, creating a tendency to view one's own group in a positive light, and by comparison, outside groups in a negative light. The implication of such behaviour is that individuals will constantly look for ways to prove to themselves that their own group is superior.

In social identity theory, social identities are organised relative to each other in a hierarchy. There are usually three levels of an identity: a superordinate level, an intermediate level and a subordinate level. An example of the superordinate level would be "human", at the intermediate level "Swedish person", and



at the subordinate level “person from Stockholm”. The saliency of the different levels affects the degree to which a social identity may impact a person’s behaviour. Social identity theorists use the term “salience” to indicate the degree to which an identity is activated in a situation. A salient social identity is “one which is functioning psychologically to increase the influence of one’s membership in that group on perception and behaviour” (Turner et al. 1987). Different identities become active when a situation changes and as relevant stimuli for self-categorization change. In other words, an important aspect of social identity theory is understanding why any individual would activate one identity rather than another. This notion, known as salience hierarchy, addresses which role a person will enact in a situation when more than one role may be appropriate (Stryker 1968).

Gino et al. (2009), in their previously discussed article, show that the educational affiliation of an individual can serve as a social identity that forms the basis for an in-group-out-group bias. Furthermore, they highlight that this bias impacts individuals’ level of ethical behaviour. Based on these findings, we will use university affiliation as a social identity to test how investors financial decision making is impacted by the in-group-out-group bias in both an ethical and unethical context.

With regards to identity and the saliency of identity one should also consider theories on commitment. Commitment has two aspects (Stryker and Serpe 1982, 1994), the first is quantitative and refers to the number of people to whom one is associated with through an identity. The more people one is associated with by holding an identity the more likely it is that the identity will be activated in a situation. The second component of commitment is qualitative meaning that stronger ties make commitment to a group more salient. Thus, the theory suggests that the degree of commitment each person has to a social identity will affect how influenced they are by the in-group-out-group bias.

As mentioned, social identity theory states that when a group identity is activated, people tend to strengthen their in-group relative to the out-group in order to enhance their own self-evaluation as group members (Turner et al. 1987). This self-esteem motive was initially thought to be the basis of in-group favouritism. Later studies have shown that other motives also influence the level of in-group favouritism. As a complement to the self-esteem motive, other motives have been suggested, including a collective self-esteem motive (Crocker and Luhtanen 1992), a self-efficacy motive, (Abrams and Hogg 1990), an uncertainty reduction motive (Hogg and Mullin 1999) and a self-regulation motive (Abrams 1994). These papers argue that any of these motives can be used to explain behaviour when the social identity is activated and depersonalization occurs. However, social identity theory research in general argues that the self-esteem motive acts as the best explanation for observed behaviour. Leary and Downs (1995) state that the self-esteem motive “has achieved the rare status of an axiom” within social psychology research. Leary et al. (1995) further argue in a different paper that the self-esteem motive acts as an “interpersonal monitor” and state that the importance of the self-esteem may be evolutionary. Human beings have a fundamental

desire to seek inclusion and avoid exclusion from important social groups because solitary human beings have diminished chances of surviving. The self-esteem motive motivates people to maintain social relationships and to behave in ways that maintain their connections with important social groups. Any threat of lowering self-esteem will make social exclusion more likely and thus motivates human beings to behave in ways to restore self-esteem in order to protect one's social bonds. This system is also designed to place greater emphasis on reactions that connote exclusion rather than inclusion since more is at stake. Thus, we have chosen to focus on the self-esteem motive in this study as a potential reason for the behaviour that we expect to observe.

Ashforth and Mael mention that social identity theory literature suggests several factors that increase the tendency of an individual to identify with certain groups. Amongst them; the distinctiveness of a group's values and practices in comparison to other groups, the degree to which a group is threatened by another group (Van Knippenberg, 1984), the prestige of a group and the saliency of out-groups. The prestige of a group can impact a person's tendency to identify with a group because individuals often cognitively identify themselves with a successful role model. Furthermore, the salience of an out-group can increase an individual's tendency to identify with a group, because the awareness of an out-group reinforces the awareness of one's own in-group.

To summarize; through the process of categorization we hypothesize that the investor groups will identify the entrepreneur as either an in-group member or an out-group member. Through this categorization, the investors' perception of the financial opportunity will be impacted. Through social comparison the investors will view the in-group entrepreneur as more similar to themselves than might be the case and they will consequently distance themselves further from the out-group entrepreneur. In accordance with the self-esteem motive we believe that the investors will attempt to promote their own self esteem. The investors exposed to the in-group investment opportunity will attribute positive qualities to the entrepreneur because that person mirrors their own self-perception. Similarly, the investors exposed to the out-group investment opportunity will be prejudiced against the entrepreneur, because they are seen as an out-group member, and this will also increase their self-esteem. Other factors such as degree of commitment, salience of the out-group and other motives can affect these findings.

### **c. Ethicality and decision making**

Bicchieri explains that "a norm can be formal or informal, personal or collective, descriptive of what most people do, or prescriptive of behaviour. In the same social setting conformity to these different kinds of norms stems from a variety of motivations and produces distinct, sometimes even opposing behavioural patterns" (2006). Social norms theory aims to understand how peer influence and the environment affects an individual's behaviour, and by definition, how a person's behaviour can be changed by altering the

environment and interpersonal influences around that individual (Perkins and Berkowitz, 1986). The theory argues that peer influences are impacted to a greater extent by perceived norms than the actual norms. Perceived norms are defined as what is viewed as being typical or standard in a group while the actual norm is defined as the real beliefs of the group. The gap between perceived norms and the actual norms is defined as misperception. Social norms theory argues that our behaviour is affected by the misperceptions that we hold of how our peers think and act. In other terms, people change their own behaviour as an approximation for the misperceived norm (Berkowitz, 2005). In the context of unethical decision making, the theory holds that overestimations of the level of unethical behaviour amongst peers will lead us to act relatively more unethically. Reversely, underestimations of the level of unethical behaviour amongst peers will lead us to act relatively more ethically. Thus, the theory states that behaviour can be influenced by altering the misperceptions that arise of the perceived norms of a group and can result in the rationalization of unethical behaviour and the inhibition of ethical behaviour.

In combination with social identity theory, we expect that social norms theory will help explain ethical and unethical decision making in a business context. There are many ways that a person's level of ethical behaviour can be affected, examples of these include; the saliency of dishonesty amongst peers, the changing of social norms, an individual's own cost-benefit analysis of a situation and the degree to which an individual identifies themselves with others acting ethically or unethically (Gino et al. 2009). In this experiment we are primarily concerned with how the changing of social norms and the degree to which people identify themselves with others acting unethically can potentially affect behaviour in a financial context.

Cialdini and Trost (1998) argue that observing another individual acting unethically changes an individual's understanding of the social norms with regards to ethical and unethical behaviour. Social norms can be divided into two categories; descriptive norms and injunctive norms (Cialdini et. al, 1990). Descriptive norms explain what a majority of individuals do in a certain situation. Injunctive norms define what most people tend to approve or disapprove of. Cialdini et. al argue that the social setting affects and determines whether people's behaviour is influenced by descriptive or injunctive norms. Descriptive norms can be seen as a form of social proof, describing what most people do in a certain situation. People use information about how others have behaved to help them determine proper conduct for themselves; "it is by looking to others that we obtain "social proof" of what is deemed proper conduct for ourselves" (Cialdini, 1984). Through use of the descriptive norm and thus social proof, we expect to be able to influence the degree of ethicality in investment behaviour.

As previously outlined, social identity theory states that people attempt to enhance their social identity and self-esteem by conforming to the norms and behaviours of the in-group and conversely distancing themselves from the norms and behaviours of the out-group. Gino et. al (2009) argue that when

an in-group member is observed acting unethically the descriptive norm will take precedence. Group members will make that in-group individual the new standard for the descriptive norm and thus act relatively more unethically. They continue their argument by stating that when an out-group member is observed acting unethically, the injunctive norm or “widely shared beliefs in a social group about how people in general or members of the group ought to behave in various circumstances” (Park and Smith, 2007) will become salient. This will lead group members to want to distance themselves from the behaviour of the out-group individual. We expect to observe similar patterns of behaviour in the investment decision making context in this study.

#### **d. Contribution to existing research**

This paper adds to current research by investigating how social identity theory and social norms theory can be used in combination to potentially explain investor behaviour. Social identity theory and its connection to explaining investment behaviour is a little explored topic. Combining this together with social norms theory in this context makes this study even more unique. Furthermore, investigating ethical and unethical behaviour using these theories in a financial setting is a largely unexplored field within behavioural finance.

### **6. Data and methodology**

#### **a. Experiment methodology introduction**

In this experiment we explored the effects of the in-group-out-group bias on financial decisions with university education as the basis for creating a social identity. Specifically, we investigated how investors’ investment decisions were influenced if the entrepreneur behind a business proposal had attended the same university as the investor. Our research therefore focused on alumni from one university, the Stockholm School of Economics (SSE), to investigate if they preferred business proposals pitched by alumni from the same university compared to alumni from another university, in this case Lund University. Lund University was chosen as the basis for the out-group identity as we considered this to be a relatively neutral school than more direct rival universities to SSE such as the Royal Institute of Technology (Kungliga Tekniska Högskolan) or the School of Business, Economics and Law in Gothenburg (Handelshögskolan Göteborg). By choosing two universities with high rankings, but not generally perceived as having a highly rivalrous relationship, we believed that if the in-group-out-group bias could be observed, the findings would be of greater interest. These findings would suggest that the in-group-out-group bias impacts financial decision making even when social identities are not highly conflicting, making the results potentially applicable to a broader spectrum of real world situations than just when social identities are very competitive with each other.

## **b. Participants**

A total of 55 people participated in the experiment. These participants work as venture capitalists, professional investors or angel investors. They were mixed with regards to age and gender and the objective was to have a representative sample of the Swedish investor landscape. As the experiment was focused on alumni from SSE the participants in the experimental groups had a Bachelor, Master or MBA degree from SSE. The participants in the control group did not have a degree from SSE or from Lund University.

## **c. Procedure and Experiment Design**

To test the hypotheses, the participants of the experiment were divided into three groups: two experimental groups and one control group. Each experimental group was made up of 20 SSE alumni. All investors were provided with the same information about the context of the experiment. More specifically, the participants were told that the study was about investment behaviour, but they were not told about social identity theory, social norms theory or anything related to SSE that would have indicated that university affiliation would be a central part of the experiment. This was done to avoid affecting their responses.

A control group was also recruited for the experiment. This third group was made up of 15 venture capitalists, professional investors and angel investors with mixed educational backgrounds. The purpose of having a control group was to identify an average value of the investment opportunities without the effects of the in-group-out-group bias. Therefore, the results of the other two experimental groups could be better understood when compared with data from the third and more neutral group. It allowed us to ensure that the SSE and Lund university pitches were similar and that other factors in the presentations did not impact the experimental groups' responses.

The participants performed the experiment at any chosen location and just before the experiment the investors received a call with standardized instructions about the experiment. As previously discussed, a pivotal part of social identity theory is the notion of identity saliency. During the call each respondent was asked three questions just before they began the experiment. These questions were: "When did you graduate from SSE? Do you remember your SSE registration number and if yes, what was it? Do you live in Stockholm?" The questions made the subordinate level "alumni from SSE" salient and thus served to strengthen the social identity "alumni from SSE" just before they began the experiment. The participants were also told that the content was fictional.

The process of assigning the SSE alumni to the experimental groups was randomized. The first group was sent two business pitches by two SSE alumni. The second group received the exact same pitches only that they were presented as having been founded by Lund University alumni instead of SSE alumni.

Originally, the idea was to film the business pitches and send them to the participants. After a pilot test with a small group of investors, it was evident that the respondents focused excessively on the personal

characteristics of the actors in the films, such as energy and passion, which was not relevant to the research topic. As a result, a pivot was necessary and instead of sending the filmed version of the pitches we concluded that the participants in the experiment should only receive the presentation slides. After piloting this data collection method, we concluded that this approach was more effective in making the investors focus more on the value of the business proposal than the personal impressions of the presenting entrepreneurs.

After reviewing the first pitch, the participants were asked to fill in the first part of the survey which only contained questions about the first pitch. The second pitch was then reviewed by the investors and the second part of the survey was answered. Finally, a third section with some brief descriptive questions was filled in by each respondent. To increase the contrast between the ethical and unethical investment opportunities both pitches were designed to be products aimed towards the same target market, namely children. The ethical business idea was an artificial intelligence study app for more effective learning, known as “Hedvig”. The unethical business idea was an augmented reality game for kids called “Monkey” aiming to be highly addictive as it would capitalize on new research about stimulation from released adrenaline and dopamine. Monkey explicitly targeted 7-12-year olds and its revenue sources were selling user data to third parties as well as in-game gambling machines that could make the game addictive for children and expensive for the parents. The business pitches were designed to be as similar as possible to real business pitch presentation materials. The order of reading the ethical or unethical business pitch first was randomized for each investor to avoid biased results because of anchoring and adjustment (Epley and Gilovich, 2006). In other words, half of the participants saw the ethical pitch first and the other half first saw the unethical pitch first.

#### **d. Survey design**

The questions in the survey were designed to test the hypotheses stated above. The investors were asked to grade general investment sentiment, confidence in the team, uniqueness and sustainability in the survey using a 7-point Likert scale. They were also given the opportunity to motivate their scores in free text sections. One question was also included asking how much they would be willing to invest in order to attempt to quantify the bias and determine how costly a potential over- and underinvestment could be. Before submitting the form, participants were asked to grade how important SSE was to their identity and if they currently work with other SSE alumni.

#### **e. Saliency**

A critical aspect of this experiment was to make certain social identities salient. As mentioned above, three questions were asked during the instructive phone call that related to SSE. In addition to this, the pitches

included the following to make the subordinate group identity of the participants salient:

1. Tailored pitch design with certain characteristics
  - a. The team was communicated to only consist of SSE students or Lund students
  - b. The company was said to be at the SSE Business Lab or the Lund Incubator
  - c. SSE or Lund University logos were present multiple times in the presentation
  - d. The investors were told that other SSE alumni or Lund alumni had already invested
2. The survey was dark blue for the SSE pitches and red for the Lund pitches to reinforce school colours
3. They were asked to participate by students at SSE as a result of their business achievements

To summarize, the objective was to make the subordinate level group identity “alumni from SSE” salient through the above approach.

#### **f. Statistical method**

The sample size of 55 participants was determined based on similar research; more specifically by a similar experiment called “Identity and Emergency Intervention: How Social Group Membership and Inclusiveness of Group Boundaries Shape Helping Behavior” (Levine et. al, 2005) which had a sample size of 45 individuals.

Once all respondents had completed the experiment, non-parametric Mann-Whitney U-tests were carried out on the two different samples, see Figure 7 in the Appendix as an example. The aim of the experiment was to find differences in investor perception of identical business opportunities and therefore this test was chosen given its ability to test for differences in medians and distributions between sample sets. Furthermore, this test was chosen since we had a small sample set of data that did not follow a normal distribution, making the Mann-Whitney U-test suitable. The test was run using Microsoft Excel and the null hypothesis was that there would be no statistical difference in median scores between the two experimental groups. The null hypothesis was based on the responses to the question: “How likely is it that you will invest in this business proposal?”.

H<sub>0</sub>: There is no statistically significant difference in median scores between the in-group and the out-group conditions

H<sub>1</sub>: There is a statistically significant difference in median scores between the in-group and the out-group conditions

### **g. Variables**

#### Dependent variables

We measured a number of dependent variables in this experiment:

1. How inclined investors were to invest in the companies
2. How much faith the investors had in the teams
3. Perception of uniqueness of the business ideas
4. Sustainability of the business ideas
5. Amount in SEK the investors were willing to invest

The last question about the sum to be invested in the company was framed in the following way: “Given that the company is asking for 5 MSEK, and 4 MSEK has already been invested by SSE alumni (or Lund alumni in the out-group condition), what amount would you be willing to invest?” The reason was to create further saliency about the social identity and create social proof of behaviour within the in or out-group. Furthermore, the objective was to lower the monetary amount to investment levels more reasonable for an individual investor.

There are two key variables relevant to include in the analysis of the results and in the statistical tests. Firstly, “How likely is it that you will invest in this business proposal?” and secondly, how much the investors were willing to invest in SEK. The questions about the faith in the team, the uniqueness and sustainability were questions asked to clarify the responses for the mentioned questions. In other words, these questions were predicted to provide better insights into what in-group members value most in the pitch. For each question, the participants were offered the opportunity to provide additional answers to their scores in free text providing us with qualitative information.

#### Treatment variables

In this experiment our treatment variables were:

1. If the business pitch was presented by SSE or Lund alumni
2. If the business idea was ethical or unethical

#### Control variables

In this experiment our control variables were:

1. All the respondents in the experimental condition were alumni from SSE
2. All the respondents in the control group were not alumni from SSE or Lund University



#### **h. Control group**

By using a control group, it could be determined whether other factors, such as differences in university rankings of SSE and Lund, may have impacted investors perception of the investment opportunities.

#### **i. Data limitations**

Our study is limited by the fact that the sample is small in absolute terms, which has an implication on how significant the results can be considered. More than 250 people were contacted for the study with 55 people participating. With more time, a larger data sample could have been collected.

Within the sample there are some deviations in terms of experience in investing. Some of the participants were partners at large early stage venture funds or very experienced angel investors, while others were investors in more junior positions. This might have had implications on the results even though the pitches were not too complex and the respondents were all given the same instructions. Nevertheless, more experienced investors may have more knowledge and higher demands on business models that could make them less likely to invest in the business proposals because they were fictional and relatively less developed compared to real business cases. However, by having investors with mixed backgrounds we could achieve a more representative sample of the Swedish investment ecosystem.

Consistency of information was considered by using scripts for all communication with the participants. They were all provided with the same instructions and the content of the pitches was identical apart from the areas that needed to be altered to test for the in-group-out-group bias. The participants were allowed to perform the experiment at any chosen location, which might have affected the results. For example, some might have done the experiment in a calm environment, while others might have been in an environment with disturbances. However, we believe that the possible effects of these environmental differences were balanced out across the answers of all the respondents because of the randomization of time slots booked to conduct the experiment.

When the participants were asked how much of the remaining 1 MSEK they would be willing to invest, some of them misunderstood the question and indicated an amount larger than 1 MSEK. The mistake has been accounted for in the data by changing these figures to 1 MSEK and not as the higher amount. However, the fact that the question was misinterpreted by a number of participants indicates that the question in the survey could have been clearer and that some respondents may have been slightly unfocused.

As stated, we also collected qualitative data in this experiment but due to the small sample size, it proved difficult to identify clear trends for most of the questions.

## 7. Results and analysis

The responses from the surveys were grouped by condition to assess the overall results. There were 55 responses in total, 20 from each experimental group and 15 in the control group. As previously stated, the respondents who were SSE alumni were assigned randomly to the experimental groups. Using a non-parametric Mann-Whitney U-test it could be determined that there was no statistically significant difference between the two experimental groups with regards to year of graduation from SSE and how important SSE was to the respondents' identity at the 1% significance level. As mentioned earlier, all questions were asked with a 7-point Likert scale where 7 was the most positive and 1 the least positive.

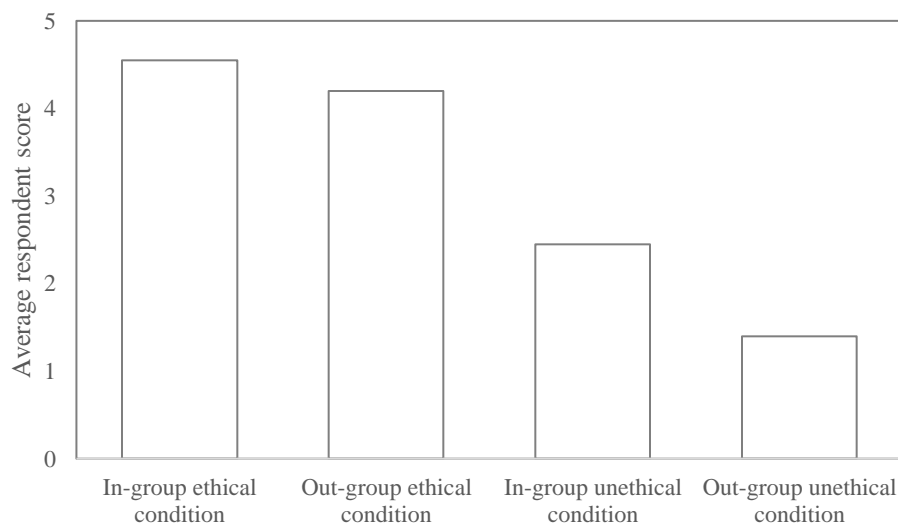
### a. Results: Hypothesis 1 and 2

**H1:** *In the evaluation of the investment proposals, the investors will prefer the pitches presented by an in-group member. Investors will be more positively inclined to the in-group investment pitch than the out-group investment pitch, independent of if the opportunity is ethical or unethical.*

**H2:** *In-group members will tend to invest more in business proposals presented by an in-group member. More hypothetical capital will be allocated to the in-group pitches compared with the out-group pitches.*

**Figure 1: Average respondent scores in all experimental conditions**

The figure below shows the average respondent score for the experimental groups for the question "how likely is it that you will invest in this business proposal?".

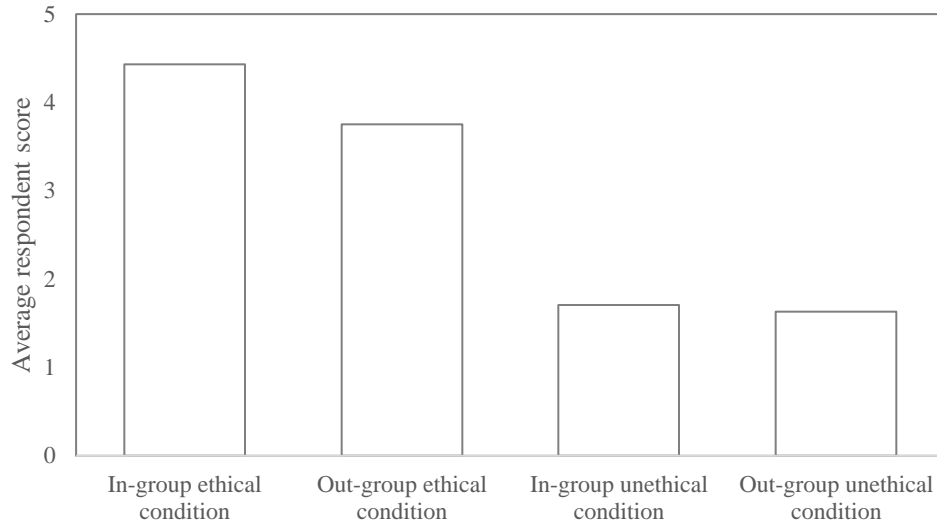


Firstly, the results in the ethical business condition supported the hypothesis that in-group members preferred the in-group investment pitch, this could not be proven however at a statistically significant level. The experimental group gave an average on the first question “how likely is it that you will invest in this business proposal” of 4,55 when the idea was presented as in-group and 4,20 when presented as out-group. When asked how strong their confidence in the team was, the average was 4,65 for the in-group condition and 4,70 for the out-group condition. The experimental group found that the presentation was unique by an average of 3,50 for the in-group presentation and 3,70 for the out-group presentation. The experimental group found that the sustainability of the idea was 4,60 when presented as in-group and 4,50 when presented as out-group. Finally, the respondents chose to invest on average 600 000 SEK in the ethical business opportunity when presented as in-group and 420 000 SEK when presented as out-group, a difference corresponding to 43%. The difference could also be observed when considering the percentage of respondents who chose to invest. In the in-group ethical condition 70% of respondents invested compared with 50% in the out-group ethical condition. When the Mann-Whitney U-test was performed on the median difference in responses for the question “how likely is it that you will invest in this business proposal” the null hypothesis could not be rejected at a significant level. Thus, the results did not support our first hypothesis for the ethical business pitch at a statistically significant level.

Secondly, the responses in the unethical condition were analysed. The experimental group gave an average of 2,45 on “how likely is it that you will invest in this business proposal” when presented as in-group and 1,40 when presented as out-group. When asked how strong their confidence for the team was, the average was 3,80 in the in-group condition and 3,20 for the out-group condition. The experimental group found that the presentation was unique with an average of 2,55 for the in-group presentation and 2,60 for the out-group presentation. The experimental group found that the sustainability of the idea was 2,95 when presented as in-group and 2,0 when presented as out-group. The respondents chose to invest on average 200 000 SEK in the unethical business opportunity when it was presented as in-group and 50 000 SEK when presented as out-group, a difference of 300%. A large difference was also observable when considering the number of participants who chose to invest. 25% of the participants in the in-group condition chose to invest in the unethical business proposal, while 5% in the out-group condition chose to invest in the unethical business proposal. For the unethical business proposal, the median difference in responses for the investors willingness to invest was statistically significant at the 1% significance level, significantly supporting the first hypothesis of this experiment.

**Figure 2: Average respondent scores in all control conditions**

*The figure below shows the average respondent score for the control groups for the question “how likely is it that you will invest in this business proposal?”.*



The results were also compared with the control group. The control group gave the ethical business opportunity a mean score on the first question “how likely is it that you will invest in this business proposal” of 4,43 when the idea was presented as in-group and 3,75 when presented as out-group. When asked how strong their confidence in the team was, the average was 4,86 for the in-group condition and 4,75 for the out-group condition. The average level of uniqueness for the control group was 3,14 for the in-group pitch and 3,62 for the out-group pitch. The average for the control group for the sustainability of the idea was 4,43 for the in-group condition and 4,38 for the out-group condition. Finally, the control group respondents chose to invest, on average 714 000 SEK in the ethical business opportunity when presented as in-group and 625 000 SEK when presented as out-group and this represents a 14% difference. When comparing how many respondents chose to invest, 71% invested in the in-group condition and 63% in the out-group condition. Mann-Whitney U-tests were performed for the differences in responses of the control group and no significant statistical difference could be found for the differences in median scores at varying levels of significance (1%, 5% and 10%).

For the unethical business proposal, the control group gave the unethical business opportunity an average of 1,71 on the first question “how likely is it that you will invest in this business proposal” for the in-group condition and 1,63 for the out-group condition. When asked how strong their confidence in the team was, the average was 3,71 for the in-group pitch and 2,88 for the out-group pitch. The control group found that the business idea was unique by an average of 1,71 for the in-group presentation and 1,63 for the out-group presentation. Also, the response from the control group showed that the sustainability of the idea was 2,00 when presented in the in-group condition and 2,38 when presented in the out-group condition.

Finally, the respondents chose to invest on average 71 000 SEK in the ethical business opportunity when presented as in-group and 125 000 SEK when presented as out-group. In the control group the in-group pitch received 43% less in funding. Again, comparing how many respondents chose to invest, 14% invested in the in-group condition and 13% in the out-group condition. A U-test was performed for the control group related to the respondents' willingness to invest and no significant statistical difference could be found for the differences in median scores varying levels of significance (1, 5 and 10%).

The results from the control groups show that there were no significant differences between the two presentations. Therefore, any differences found in the experimental groups can be explained by other factors.

In addition to the quantitative statistical analysis carried out, a qualitative analysis was performed. The most significant difference in the motivations given was for the unethical pitch where the respondents were asked to motivate why they chose to invest or not to invest. When the unethical pitch was presented to the experimental group as out-group, 80% explicitly raised ethical concerns and used the word "unethical" or a close synonym. In comparison, in the experimental group when the unethical pitch was presented as in-group, the respondents were more focused on issues such as ownership share and issues related to the industry overall, only 20% used wording similar to "unethical". The differences for the in- and out-group qualitative responses with regards to ethicality is statistically significant at the 1% significance level. In both conditions, 50% of the respondents in the control group raised ethical concerns regarding the unethical business proposal. The qualitative analysis also considered the strength of the team as well as the uniqueness and sustainability of the business proposals. However, on these parameters the experimental groups did not vary much regardless of whether the pitch was presented as in-group or out-group. Tables can be found in the appendix with the relevant data, these parameters will however not be discussed further in the analysis. We chose to ask questions about the respondents' perception of the uniqueness and sustainability of the proposals as well as the strength of the team as we thought that they would contribute in explaining the average score and average sum invested, however it seems that the parameters selected were not as relevant as anticipated.

**Table 1: Mean data and differences between in- and out-groups***The table contains mean data for the experimental and control group responses to the survey questions.*

	In-group treatment mean	Out-group treatment mean	Difference in responses	In-group control mean	Out-group control mean	Difference in responses
<b>Ethical condition</b>						
Willingness to invest	4,55	4,2	0,35	4,42	3,75	0,67
Faith in the team	4,65	4,7	-0,05	4,86	4,75	0,11
Uniqueness	3,5	3,7	-0,2	3,14	3,63	-0,49
Sustainability	4,6	4,5	0,1	4,43	4,38	0,05
Invested amount (KSEK)	600	420	180	714	625	89
<b>Unethical condition</b>						
Willingness to invest	2,45	1,4	1,05	1,71	1,63	0,08
Faith in the team	3,8	3,2	0,6	3,71	2,88	0,83
Uniqueness	2,55	2,6	-0,05	1,71	1,63	0,08
Sustainability	2,95	2	0,95	2	2,38	-0,38
Invested amount (KSEK)	200	50	150	71	125	-54

Descriptive statistics were also collected about the respondents. The respondents in the experimental groups were asked how important SSE was to their identity. The respondents in the in-group experimental condition gave a median answer of 6 on a 7-point Likert scale and the respondents in the out-group condition gave a median answer of 5. The median year of graduation from SSE in the two groups were 1998 and 2003 respectively. In the in-group condition 85% of the respondents worked with other SSE alumni and in the out-group condition 95% of the respondents worked with other SSE alumni. Mann-Whitney U-tests were performed on the responses on these three questions and no significant difference was found in median responses between the two groups at varying levels of significance (1%, 5% and 10%). For the control groups, data was only collected of whether the respondents worked with SSE alumni or not as they would not have been able to provide responses to how important SSE was to their identity or year of graduation from SSE. In the in-group control condition 86% of the respondents worked with SSE alumni and in the out-group control condition 75% worked with SSE alumni.

**Table 2: Descriptive data for the groups**

*The table contains data for experimental and control group responses to the descriptive section of the experiment. Statistical significance of a Mann-Whitney U-test is at 1% (\*\*\*), 5% (\*\*), 10% (\*) and 20% (^) significance levels for no difference in responses.*

	In-group treatment median	Out-group treatment median	Difference	In-group control mean	Out-group control mean	Difference
SSE is an important part of my identity	6	5	1***	N/A	N/A	N/A
Average year of graduation from SSE	1998	2003	-5***	N/A	N/A	N/A
	In-group treatment	Out-group treatment	Difference	In-group control	Out-group control	Difference
Currently work with SSE alumni	85%	95%	-10%***	86%	75%	11%
STD - SSE is an important part of my identity	1,8	1	0,8	N/A	N/A	N/A
Max - SSE is an important part of my identity	7	7	0	N/A	N/A	N/A
Min - SSE is an important part of my identity	1	3	-2	N/A	N/A	N/A
STD - year of graduation	11	14	-3	N/A	N/A	N/A
Max - year of graduation	2016	2017	-1	N/A	N/A	N/A
Min - year of graduation	1983	1967	16	N/A	N/A	N/A

**b. Analysis: Does an intergroup bias exist and if so, why does it arise?**

The results of this experiment show that tendencies of an intergroup bias could be found in the ethical condition and that the intergroup bias could be observed at a statistically significant level for the unethical condition. This is in line with our first hypothesis that the investors would prefer the in-group pitches over the out-group pitches. As presented in the methodology section of this paper, there was no difference between the business proposals apart from college affiliation. Therefore, according to traditional finance assumptions, there should be no difference in the results between the in- and out-group conditions. We believe that the results of this study can be explained by social identity theory. The results show that the respondents in the in-group conditions had a more favourable perception of the opportunities relative to the out-group conditions, highlighting the formation of an in- and out-group. These results can be explained by the central processes of social identity theory, the self-esteem motive, the saliency of out-groups and the formation of a perceived in-group and out-group norm. According to Ashforth and Mael (1989) social identification is seen as personally experiencing the successes and failures of the group and in this case the participants will determine whether the business proposal will succeed or fail in being funded. In other words, they can increase their own self-esteem and increase the prestige of their in-group by viewing the opportunity favourably and being inclined to invest.

As mentioned above, the central processes of social identity theory can potentially help explain the results of this study. Through a normal cognitive process, the respondents categorized the information presented to them in order to be able to process it in a more efficient manner. As a result, the respondents could identify themselves with a specific group and compare these groups in accordance with the self-

esteem motive. This process led to exaggerated differences between the investment opportunities. In the in-group condition, these processes led to enhanced support for the business opportunities. In the out-group condition, we could observe increased discrimination and prejudice against the opportunities. Another interesting observation is that the confidence in the team, sustainability and uniqueness of the business proposal did not always correlate with the inclination to invest or the actual amount invested.

In accordance with the self-esteem motive, we argue that the respondents attempted to enhance their self-image by increasing the status of the group they belonged to and by discriminating against the out-group. This can be seen in both the ethical and unethical results. Tajfel and Turner define social identity as a person's sense of who they are based on their group membership (1979). They further argue that social identity and thus group membership is a source of pride and self-esteem. By enhancing the status of the group individuals belong to, they can enhance their own self-image. This can also be achieved by discriminating against out-group individuals. The overall results for both the ethical opportunity and the unethical opportunity show support for this argument.

The fact that nearly all respondents in the experimental groups worked with other SSE alumni and stated that SSE was an important part of their identity suggests that they felt a relatively strong degree of commitment towards the social identity "alumni from SSE". Thus, according to theories on commitment, the respondents' behaviour can potentially be explained by the strong degree of commitment they felt to the group identity, resulting in their judgments becoming more affected by the in-group-out-group bias.

The saliency of out-groups could possibly have contributed to differences in perception of the investment opportunities in both the ethical and unethical pitches. The saliency of out-groups, or in other terms the awareness of out-groups, is argued to reinforce the awareness of one's in-group. Thus, investors in the out-group ethical and unethical conditions, when presented with the information that out-group individuals had invested in the opportunity, were made more aware of the out-group. In turn, this led them to identify more strongly with their in-group and as a result discriminate against the out-group more.

The formation of a perceived in-group and out-group norm also contributed to the differences in perception of the investment opportunities. In the in-group condition, the investors were provided with information that the opportunity was founded by individuals belonging to their group and that other in-group members had invested in the opportunity. The formation of the in-group norm through this process allowed the respondents to form a reference point for how other members of their in-group behaved allowing them to measure how far their own behaviour deviated from the perceived in-group standard. We believe that this process contributed to more positive perceptions of the investment opportunities for the respondents in the in-group. In the out-group condition, the investors were provided with information that the opportunity was founded by individuals belonging to an out-group and that members of the out-group



had invested in it. This created an out-group norm that led to the respondents answering relatively more negatively to the investment opportunities.

An area of particular interest is why a significant difference in the perception of the unethical business pitches relative to the ethical business pitches could be observed. This topic will be explored in the next section.

**c. Results: Hypothesis 3**

*H3: The difference in perception of the investment opportunities will be significantly larger between the in-group and out-group unethical opportunity than the in-group and out-group ethical opportunity. The investors will be significantly more positive to the in-group unethical opportunity than the out-group unethical opportunity when compared with the results found in the ethical condition.*

There was a statistically significant difference in investment appetite for the unethical business opportunity when comparing the in- and out-group versions of the pitch according to the Mann-Whitney U-test which showed a significant difference in median responses at the 1% significance level. There was no statistically significant difference in investment appetite between the in-group and out-group versions of the ethical business opportunity, even though the data shows that the participants had a preference for the in-group pitch but to a limited extent. These findings support the third hypothesis.

**d. Analysis: Why is there a larger difference in perception of the business opportunities in the unethical condition when compared to the ethical condition?**

Both results in the ethical and unethical conditions can potentially be explained by social identity theory and the self-esteem motive. However, the fact that the difference in perceptions of the unethical opportunities is relatively larger compared to the difference in perceptions of the ethical opportunities is a result that requires deeper analysis. We argue that one of the main reasons for this is that the unethical condition was perceived as relatively more controversial than the ethical condition. Thus, the cognitive process for having a clear opinion in the out-group unethical condition was easier, leading to a more pronounced negative result when compared to the out-group ethical condition. Furthermore, we argue that in the unethical case it was of greater relevance for the investors to take either a relatively more positive or negative view because of their own self-concept. These arguments rest on certain aspects of social identity theory as well as on social norms theory. According to Tajfel and Turner (1986), individuals have a choice to leave their existing group by joining some other positively distinct group or strive to make the existing group more positively distinct. In this case, it seems that participants have opted to strengthen the in-group

even in the unethical condition indicating a desire to attempt to support the social group rather than leave it.

Firstly, a reason why in-group members were significantly more inclined to invest in the unethical business idea when presented by the in-group could be connected to the self-esteem motive. The perceptions of the in-group and out-group business opportunities were related to the respondents' self-esteem in distinct patterns. The self-esteem motive can be considered to be related to defence mechanisms in the sense that the in-group participants were automatically more positive to the business proposals when presented by in-group members due to self-interest. Anything negative regarding the business proposals would reflect poorly on their own self-esteem, which increases the importance to enhance the status of the in-group. In the case of the unethical business proposal, we argue that this is particularly evident. Moreover, as stated in the research by Leary et al. (1995), our psychological system is designed to place greater emphasis on reactions that connote exclusion rather than inclusion as that is perceived as more of a threat to survival. Human beings' systems closely monitor the inclusionary status for indications of disapproval and exclusion in order to motivate behaviour that will restore status when it is threatened. This could potentially explain why the difference in the experimental group between the ethical and unethical pitch is more significant. When the unethical business proposal is presented to the experimental group as in-group, there is a high risk of negative impact to their self-esteem if they criticize it. The unethical business pitch implies that an in-group member is acting unethically and thereby reduces the relative status of the group. The in-group members can either distance themselves from the idea by finding ways to show that the in-group members are "bad apples" or they can alter their own behaviour and alter their perceptions of ethicality. The resulting change in behaviour can be observed in the quantitative data, where the respondents give a significantly higher median score in the in-group condition compared to the out-group condition for the unethical pitch. This same behaviour can further be observed in the qualitative data highlighted by the fact that 80% of the respondents explicitly responded that the unethical business proposal was "unethical" in the out-group condition compared to 20% of the respondents in the in-group condition. In the in-group condition, respondents chose instead to focus on other areas of the business to justify their investment decision. Thus, in accordance with social identity theory the results show that individuals will overstate the level of support they have for an investment opportunity in order to uphold and improve their self-esteem. We argue thus, that in cases where their self-esteem is threatened to greater extents (e.g. in-group members acting unethically) individuals will alter their behaviour and perceptions to an even greater degree in accordance with the self-esteem motive.

Secondly, social norms theory can further potentially explain the amplification of the results. Social norms theory holds that individuals incorrectly perceive the attitudes and behaviours of in-group members. This leads to people changing their behaviour to approximate the misperceived norm which can lead to a

justification of unethical behaviour and repression of ethical behaviour. Berkowitz states that incorrectly perceiving peer behaviours “can cause the expression or rationalization of problem behaviour and the inhibition or suppression of healthy behaviour.” (2005). We believe that this misperception of group norms contributes to the difference in the results. Using social proof, the respondents determined how others had behaved to help determine proper conduct for themselves. In the in-group condition, the investors were provided with information that the idea was from SSE and that other SSE alumni had invested, making the descriptive norm for in-group behaviour salient. This gave the respondents social proof and set a social norm for what was deemed acceptable for the in-group. As a result, the investors altered their perception of the business opportunity in order to approximate for the misperceived norm leading to a more positive result for the investment opportunity. This behaviour is in line with Cialdini’s findings that people alter their behaviour in accordance with social proof and the perceived social norms as it is an efficient cognitive mechanism; “if everyone is doing it, it must be a sensible thing to do” (1988). Reversely, in the out-group condition respondents were given information that the business proposal was from Lund (out-group) and that Lund alumni (out-group members) had invested in it. This led to the creation of an out-group norm, providing social proof of how out-group members act unethically and making the injunctive norm for acceptable ethical behaviour salient. Therefore, in the out-group condition the respondents reacted strongly against the business opportunity leading to overall low scores as they used the available group-information to influence their own behaviour. Thus, the relatively larger difference in perceptions of the unethical business opportunities, compared to the perceptions of the ethical business opportunities, can potentially be explained by social norms.

To conclude, investors appear to be more objective when judging ethical investment opportunities, yet their behaviour still tends to be affected by the in-group-out-group bias. This result is in accordance with the central processes of social identity theory, the self-esteem motive, saliency of out-groups and the formation of in-group and out-group norms. When faced with unethical investment opportunities investors appear to become more subjective in their judgments as they attempt to uphold their self-esteem and are impacted by the formation of different social norms that either make them more positive or negative towards the investment opportunity depending on if it is perceived as in- or out-group. The implication of these findings is an inefficient allocation of capital. Either the in-group over-invests in in-group members, or they under-invest in out-group members. Problems arise on a greater level if a dominant in-group exists amongst investment decision makers, increasing the risk of a loss in societal welfare.

**Table 3: Amounts invested and qualitative responses**

*The table contains data for experimental and control group respondents' amounts invested and qualitative responses. Statistical significance of a Mann-Whitney U-test is at 1% (\*\*\*), 5% (\*\*), 10% (\*) and 20% (^) significance levels for difference in responses.*

	In-group treatment	Out-group treatment	Difference in responses	In-group control	Out-group control	Difference in responses
<b>Ethical condition</b>						
Investing respondents	70%	50%	20%	71%	63%	8%
Average amount invested (KSEK)	600	420	180	714	625	89
Comment about university	20%	15%	5%	29%	25%	4%
Comment about professional experience	50%	55%	-5%	57%	88%	-31%
Comment about competitive environment	35%	40%	-5%	29%	38%	-9%
Comment about ownership share	5%	10%	-5%	0%	13%	-13%
Comment about ethicality	0%	0%	0%	0%	0%	0%
<b>Unethical condition</b>						
Investing respondents	25%	5%	20%^	14%	13%	1%
Average amount invested (KSEK)	200	50	150	71	125	-54
Comment about university	15%	10%	5%	43%	13%	30%
Comment about professional experience	45%	50%	-5%	29%	50%	-21%
Comment about competitive environment	50%	15%	35%	0%	13%	-13%
Comment about ownership share	15%	0%	15%	14%	25%	-11%
Comment about ethicality	20%	80%	-60%***	43%	50%	-7%

## 8. Discussion

### a. How can this behaviour be addressed?

Having identified this bias, the effects of social norms and its consequences for the broader venture financing ecosystem, it is of great interest to propose solutions. The in-group-out-group bias and social norms can be addressed in several ways and we propose focusing on four different levels; governmental, educational, company and individual.

Governments can incentivise investors to broaden their investment scope and work more actively to invest in minorities. Through subsidies and tax benefits, governments can help steer investment towards groups and individuals deemed as marginalised or at risk. Furthermore, states can start their own investment activities and offer government grants actively focused on investing in outside communities in order to compensate for this behaviour with the long-term objective of creating a more diverse group of investment decision makers as capital becomes more evenly allocated.

On the educational level, universities and schools can work proactively to incorporate a greater level of critical thinking and norm criticism throughout a student's educational journey. Business schools can modernize their finance courses by elevating the status and importance of behavioural finance studies. Students need traditional finance theory as a foundation for many other areas of business education, but we argue that they also need behavioural finance in order to understand how psychology and finance can

together explain real decisions and behaviour. Awarding the 2017 Nobel Prize in Economics to Richard Thaler is an excellent example of a way of elevating the importance of this research area.

On the corporate level companies working within investing can take several actions to raise awareness of the in-group-out-group bias and the effects of social norms. They can implement internal policies for how investment decisions should be made. Checks and balances can be introduced to ensure that investment decisions are well motivated and that a rational line of reasoning exists for each decision. Internal education programs focusing on biases and norms in investment decisions can be offered to employees. Companies can recruit more diversely to their investment teams which may help to provide more balanced and broader views in the decision-making process and offset social identity biases.

Ultimately on the individual level each investor has a responsibility to push for self-examination and think about how they make decisions. Analysing one's own decisions and trying to formulate them in rational terms would help individuals become more aware of their behaviour and actions.

#### **b. Further studies**

This study has examined how decisions are potentially impacted by the in-group-out-group bias in early-stage investment decisions using educational affiliation as a social identity. The results are thus local for this financial context even though we believe that they can be applied to a broader spectrum of examples. This paper provides a basis for further studies exploring the effects of this bias using other social identities, examples of which include gender, nationality and age. Investigating the impact of this bias at other stages of investing would also be interesting and would provide insights where this bias is most prevalent. Early stage investing, compared with private equity for example, often involves higher degrees of uncertainty which might make this group of investors more susceptible to investment biases due to the lack of quantitative data.

Other closely related variants of this experiment would also be interesting to conduct. Testing for other types of education, such as engineering degrees, would show if this bias is more closely tied in some way to business education or applicable to a wider range of educational backgrounds. Reversing the experiment using Lund alumni in the experimental groups instead of SSE alumni would also be of great interest. Such an experiment would provide a better understanding for how other factors impact the strength of the bias, for example size and prestige of the school.

Finally, performing the experiment again using larger experimental and control groups would provide clarity as to whether the bias leads to relatively greater amounts of overinvestment in the in-group or relatively larger amounts of underinvestment in the out-group. Our findings suggest that investors tend to over-invest and under-invest in the in- and out-group respectively. To answer this at a statistically significant level, larger sample sets are needed.

## **9. Conclusion**

As discussed in the introduction, venture capital allocation in Sweden appears to be funnelled towards a distinct group of individuals. The stereotypical entrepreneur is Caucasian, male and Stockholm-based. The investor community that determines which ventures get access to finance is also primarily made up of the same stereotype. The skewed allocation of funds is, according to research, not backed by superior performance and cannot be explained by traditional finance theories. Research shows instead that other factors seem to be impacting financial decisions. Our experiment adds to behavioural finance research by exploring the in-group-out-group bias and social norms theory. The findings show that investors' behaviour could potentially be explained by these theories. Similarities in our method and findings can be found in the experiment performed by researchers at Harvard and MIT where they presented identical business proposals to a group of venture capitalists and found that 70% of the participants chose to invest in the ventures presented by a male voice compared with 30% if the pitcher's voice was female. The content was identical and rationally there should be no difference in the willingness to invest if there is no proof of male ventures performing better. In our experiment we found similar results when using education as a social identity instead of gender and we concluded that in-group investors invested more in business proposals presented by in-group entrepreneurs.

A second layer of the experiment showed that the difference in willingness to invest depended on whether the business proposal was ethical or unethical. The in-group ethical proposal received 43% more in financing than the out-group ethical proposal. The unethical business proposal in the in-group condition received 300% more investment than in the out-group condition suggesting that investor behaviour becomes more subjective when in-group business ideas become more controversial.

When put in a wider context, our findings also show that education can serve as a strong social identity and as a result entrepreneurs that are perceived as in-group by the investors may be at a systematic advantage and therefore have better access to financing. This becomes a societal issue if there is a dominant group of investors in the community that have a shared social identity. As argued earlier, innovation and entrepreneurship are closely linked to job creation, economic growth and prosperity in society and if the best ideas do not get funding due to social biases, the market suffers a social loss as a whole.

At the beginning of the thesis we asked the following question:

*To what extent are group-based distinctions founded on the social identity of university belongingness predictors of access to venture funding, and how is this affected in the context of ethical and unethical decision making?*

Based on the outcomes of this experiment, we can conclude that university belongingness can serve as a predictor of access to venture funding and that this is particularly true when the business proposal is unethical. The in-group-out-group bias together with social norms theory could be combined to help explain the observed behaviour. Social identity theory and social norms theory have previously been untested in this investment decision making context and with this study, the social identity theory has now been tested in a new setting that proved to be sensitive to this type of bias. As mentioned, more research is required to investigate how widespread this problem might be and what other social identities may impact financial decision making.

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## 11. Appendix

### Respondent data

**Table 1: Mean data and differences between in- and out-groups**

	In-group treatment mean	Out-group treatment mean	Difference in responses	In-group control mean	Out-group control mean	Difference in responses
<b>Ethical condition</b>						
Willingness to invest	4,55	4,2	0,35	4,42	3,75	0,67
Faith in the team	4,65	4,7	-0,05	4,86	4,75	0,11
Uniqueness	3,5	3,7	-0,2	3,14	3,63	-0,49
Sustainability	4,6	4,5	0,1	4,43	4,38	0,05
Invested amount (KSEK)	600	420	180	714	625	89
<b>Unethical condition</b>						
Willingness to invest	2,45	1,4	1,05	1,71	1,63	0,08
Faith in the team	3,8	3,2	0,6	3,71	2,88	0,83
Uniqueness	2,55	2,6	-0,05	1,71	1,63	0,08
Sustainability	2,95	2	0,95	2	2,38	-0,38
Invested amount (KSEK)	200	50	150	71	125	-54

Table contains mean data for experimental and control group responses to the survey questions.

**Table 2: Descriptive data for the groups**

	In-group treatment median	Out-group treatment median	Difference	In-group control mean	Out-group control mean	Difference
SSE is an important part of my identity	6	5	1***	N/A	N/A	N/A
Average year of graduation from SSE	1998	2003	-5***	N/A	N/A	N/A
	In-group treatment	Out-group treatment	Difference	In-group control	Out-group control	Difference
Currently work with SSE alumni	85%	95%	-10%***	86%	75%	11%
STD - SSE is an important part of my identity	1,8	1	0,8	N/A	N/A	N/A
Max - SSE is an important part of my identity	7	7	0	N/A	N/A	N/A
Min - SSE is an important part of my identity	1	3	-2	N/A	N/A	N/A
STD - year of graduation	11	14	-3	N/A	N/A	N/A
Max - year of graduation	2016	2017	-1	N/A	N/A	N/A
Min - year of graduation	1983	1967	16	N/A	N/A	N/A

Table contains data for experimental and control group responses to the descriptive section of the experiment. Statistical significance of a Mann-Whitney U-test is at 1% (\*\*\*), 5% (\*\*), 10% (\*) and 20% (^) significance levels for no difference in responses.

**Table 3: Amounts invested and qualitative responses**

	In-group treatment	Out-group treatment	Difference in responses	In-group control	Out-group control	Difference in responses
<b>Ethical condition</b>						
Investing respondents	70%	50%	20%	71%	63%	8%
Average amount invested (KSEK)	600	420	180	714	625	89
Comment about university	20%	15%	5%	29%	25%	4%
Comment about professional experience	50%	55%	-5%	57%	88%	-31%
Comment about competitive environment	35%	40%	-5%	29%	38%	-9%
Comment about ownership share	5%	10%	-5%	0%	13%	-13%
Comment about ethicality	0%	0%	0%	0%	0%	0%
<b>Unethical condition</b>						
Investing respondents	25%	5%	20%^	14%	13%	1%
Average amount invested (KSEK)	200	50	150	71	125	-54
Comment about university	15%	10%	5%	43%	13%	30%
Comment about professional experience	45%	50%	-5%	29%	50%	-21%
Comment about competitive environment	50%	15%	35%	0%	13%	-13%
Comment about ownership share	15%	0%	15%	14%	25%	-11%
Comment about ethicality	20%	80%	-60%***	43%	50%	-7%

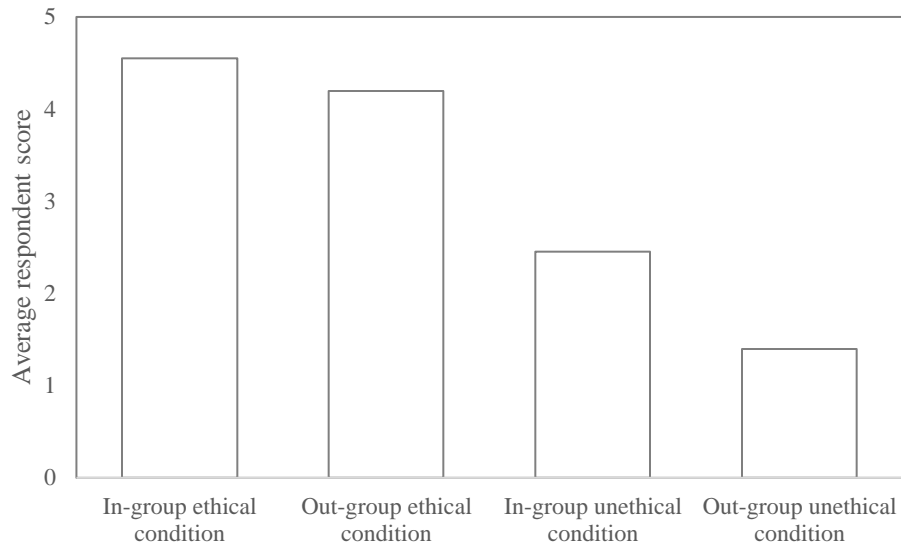
Table contains data for experimental and control group respondents' amounts invested and qualitative responses. Statistical significance of a Mann-Whitney U-test is at 1% (\*\*\*), 5% (\*\*), 10% (\*) and 20% (^) significance levels for difference in responses.

**Table 4: Median data for willingness to invest and amounts invested**

	In-group treatment median	Out-group treatment median	Difference in responses	In-group control median	Out-group control median	Difference in responses
<b>Ethical condition</b>						
Willingness to invest	4	4,5	-0,5	4	4	0
Invested amount (KSEK)	1000	200	800	1000	1000	0
<b>Unethical condition</b>						
Willingness to invest	2	1	1***	2	2	0
Invested amount (KSEK)	0	0	0	0	0	0

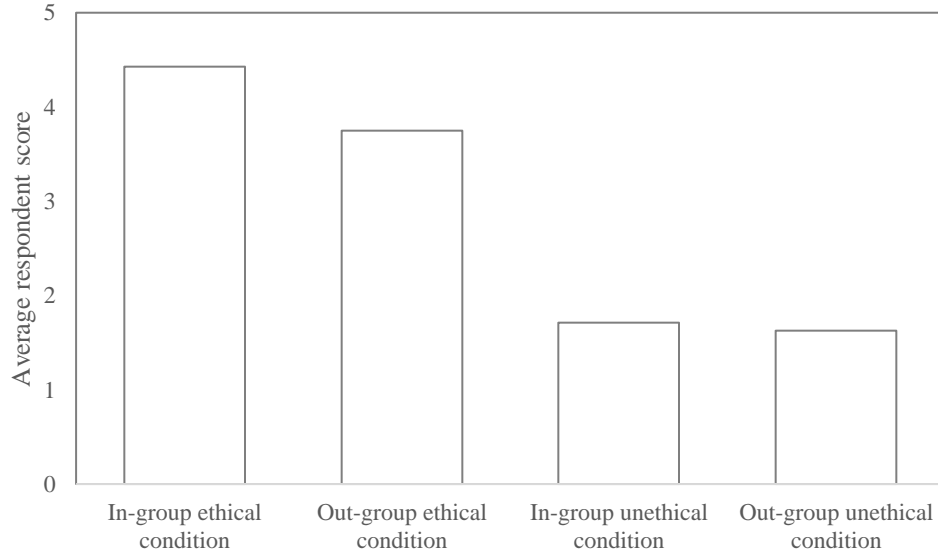
Table contains median data for experimental and control group respondents' willingness to invest and the total amounts they would like to invest. Statistical significance of a Mann-Whitney U-test is at 1% (\*\*\*), 5% (\*\*), 10% (\*) and 20% (^) significance levels for difference in responses.

**Figure 1: Average respondent scores in all experimental conditions**



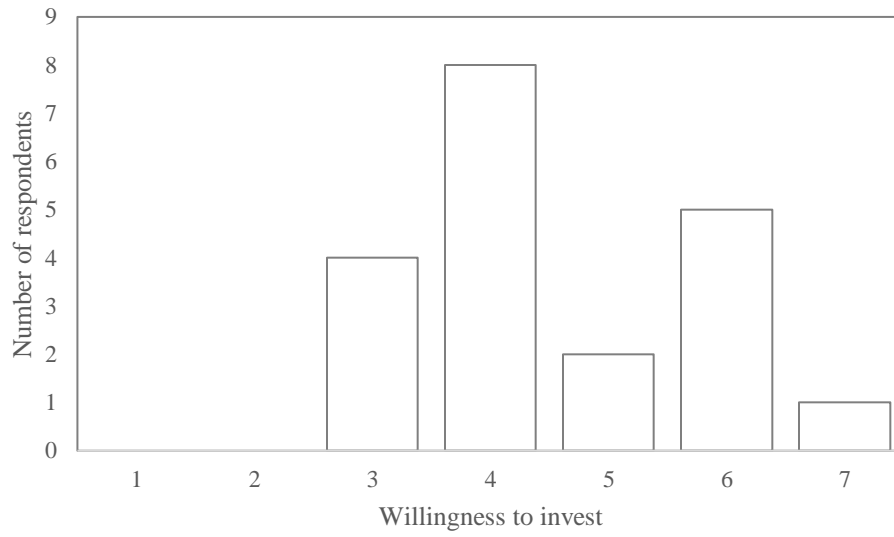
The figure above shows the average respondent score for the experimental groups for the question “how likely is it that you will invest in this business proposal?”.

**Figure 2: Average respondent scores in the control conditions**



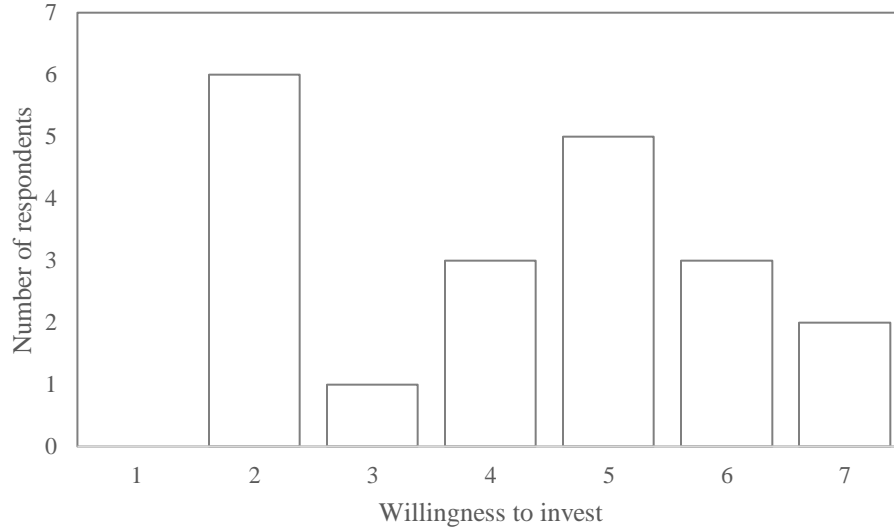
The figure above shows the average respondent score for the control groups for the question “how likely is it that you will invest in this business proposal?”.

**Figure 3: Frequency of responses in-group ethical condition**



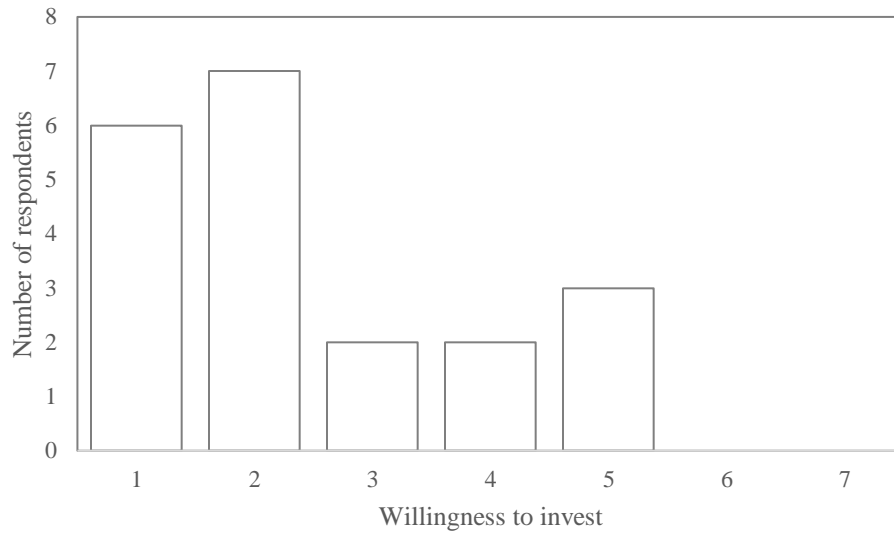
The figure above shows the frequency of responses for willingness to invest in the business proposal in the in-group ethical condition.

**Figure 4: Frequency of responses out-group ethical condition**



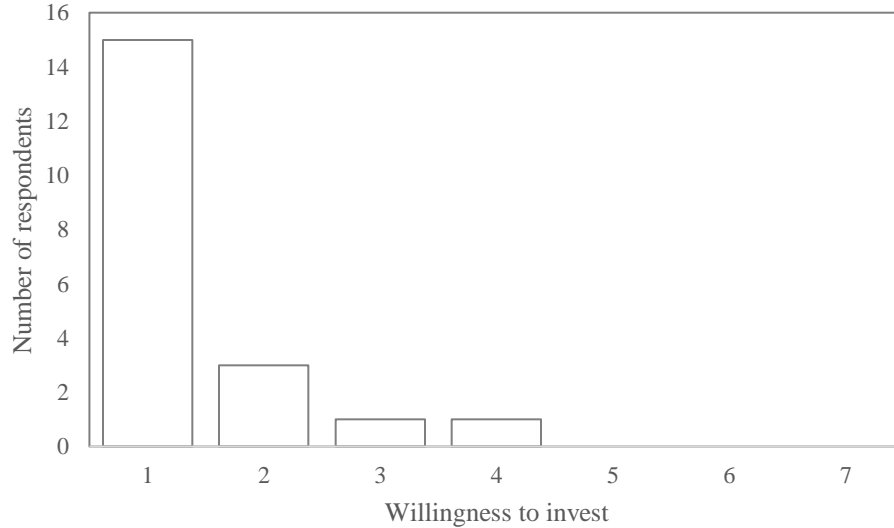
The figure above shows the frequency of responses for willingness to invest in the business proposal in the out-group ethical condition.

**Figure 5: Frequency of responses in-group unethical condition**



The figure above shows the frequency of responses for willingness to invest in the business proposal in the in-group unethical condition.

**Figure 6: Frequency of responses out-group unethical condition**



The figure above shows the frequency of responses for willingness to invest in the business proposal in the out-group unethical condition.

### Figure 7: Non-parametric Mann-Whitney U-test Example

Example of a non-parametric Mann-Whitney U-test for differences in median scores for responses in the experimental and control groups for the question “how likely is it that you will invest in the business opportunity?”

#### Group Condition

In-group	1
Out-group	2
Number of in-group observations	n1
Number of out-group observations	n2
Sum of ranks assigned to in-group	R1
Sum of ranks assigned to out-group	R2
U1	$n1n2+n1(n1+1)/2-R1$
U2	$n1n2+n2(n2+1)/2-R2$

<b>Treatment</b>	Lower bound critical value 20% significance	151
	Lower bound critical value 10% significance	138
	Lower bound critical value 5% significance	127
	Lower bound critical value 1% significance	105
	n1 in-group	20
	n2 out-group	20
Unethical	Sum of ranks for in-group	506,5
	Sum of ranks for out-group	313,5
	Total sum of ranks	820
	U1	103,5
	U2	296,5
	Reject null hypothesis if $U1 < 127$	
	Conclusion: reject the null hypothesis with 99% certainty	
Ethical	Sum of ranks for in-group	430
	Sum of ranks for out-group	390
	Total sum of ranks	820
	U1	179
	U2	220
	Reject null hypothesis if $U1 < 127$	
	Conclusion: cannot reject the null hypothesis at 95%	



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<b>Control</b>	Lower bound critical value 5% significance	10
	Lower bound critical value 1% significance	6
	n1 in-group	7
	n2 out-group	8
Unethical	Sum of ranks for in-group	57
	Sum of ranks for out-group	63
	Total sum of ranks	120
	U1	27
	U2	29
	Reject null hypothesis if $U1 < 10$	
	Conclusion: reject the alternative hypothesis with 99% certainty	
Ethical	Sum of ranks for in-group	60
	Sum of ranks for out-group	60
	Total sum of ranks	120
	U1	23
	U2	32
	Reject null hypothesis if $U1 < 10$	
	Conclusion: reject the alternative hypothesis with 99% certainty	

**Figure 8: Survey questions**

*The questions below are taken from the survey sent out to all participants. The exact wording of the questions depended on the condition, and here the in-group condition within the experimental group has been taken as the example:*

**Part 1:**

1. How likely are you to invest in the company “Hedvig/Gamez” having read through the slides? (Scale 1-7)
2. How much faith to you have in the team? (Scale 1-7)
3. What did you perceive as strong/weak regarding the team? (Free text)
4. How unique do you perceive the business idea? (Scale 1-7)
5. What did you/did you not perceive as unique? (Free text)
6. How sustainable do you consider the business idea to be? (Scale 1-7)
7. Given that the company is asking for 5 MSEK, of which 4 MSEK has already been secured by other SSE alumni, how much would you be willing to invest? (Assuming that you have unlimited ability to invest) (Free text)
8. What did you base your answer to the previous question on? (Free text)

**Part 2:**

Exact same questions but for the second business idea.

**Part 3:**

“SSE is an important part of my identity” (Scale 1-7)

Do you work with any SSE alumni at the moment? (Yes/No)

Figure 9: The business presentations

1. Ethical in-group condition



**Meet Hedvig**

A digital study coach

**Svenska skolan idag:**

- ❑ **Sämlre studieresultat**
- ❑ **Lärarbrist**
- ❑ **Utdaterad pedagogik och lärandemål**

**Svenska skolan har blivit en fritidsgård**

**Inger Enkvist:**  
Kunskapsnationen Sverige är en falsk självbild

**OECD:s larm: Svensk skola är för ojämlik**

**Marknaden för utbildning**

Utbildningssektorns storlek = 3x media och underhållning

Marknaden växer med 17% per år

Bara 2% av utbildningen i världen har digitaliserats ➔ Underutvecklad



**Viktiga trender för EdTech**

- Det blir vanligare att betala för läxhjälp
  - ◆ Ca 25% av alla barn i Sverige har någon typ av privat läxhjälp
  - ◆ Finns betalningsvilja för läxhjälp, och den växer
- Yngre generationen söker digitala hjälpmedel
  - ◆ 90% av alla elvaåringar har en egen smartphone
  - ◆ De är tekniskvana och duktiga på att ta till sig information digitalt
- Tekniken finns redan: smarta algoritmer, maskininläring och artificiell intelligens

**Team**



**CEO - Johan Bonde**  
Grundare av läroversteg som tar hand om 10-12 år gamla. Tidigare utbildare för Högskolan i Gäddede och grundare av Högskolan i Gäddede.

MSc Finance & Risk  
Handelskolegatan i Stockholm



**COO - Emma Karlsson**  
Tidigare utbildare och grundare av Högskolan i Gäddede. Tidigare utbildare för Högskolan i Gäddede.

MSc International Business & Risk  
Handelskolegatan i Stockholm



**CTO - Max Ström**  
5+ år erfarenhet av att bygga appar med inläroversteg. Kuning team medvetenhet och smarta algoritmer för just inläroversteg.

BSc Business & Economics från  
Handelskolegatan i Stockholm



THE STUDENT ASSOCIATION

**Hedvig...**

Är en digital inläroversteg i form av en app som

Lär sig hur varje elev tar till sig kunskap bäst och som

Kan ge personliga rekommendationer och skräddarsyr innehåll

### Hur funkar produkten?

- Genom partnerskap med bokförlag köper vi in de kursböcker som används i skolan
- Vi omvandlar innehållet för att passa appen och hur barn bäst lär sig. Sedan lägger vi till interaktiva delar och använder oss av gamification



- Eleven väljer årskurs samt ämne som ska studeras
- Hedvig kommer ihåg allt och ju mer hon används, desto bättre blir hon
- Uppgifter och studieområden rekommenderas baserat på de kunskapsbrister som Hedvig snabbt identifierar

### Fokus på fokus (och belöning)

Hedvig är intuitivt och stimulerande → Bättre fokus

Inga notifikationer tillåts på mobilen när appen används → Bättre fokus

Genom ett samarbete med spännande butiker och kedjor får barn rabatter och erbjudanden efter avklarat plugg → Belöning för fokus!



## 100 kr i månaden

Abonnemangsstruktur som ger full access till allt material för en årskurs  
(Det kommer gå att köpa till moduler, till exempel inför de nationella proven)



### Resan framöver



### Finansiering

- Växer med 8 000 användare i månaden
- Nyligen intagna på SSE Business Lab
- Värderade till 20 MSEK (pre-money)
- Söker nu 5 MSEK (3 MSEK för produktutveckling, 2 MSEK för marknadsföring)
  - 4 MSEK har redan säkrats av en grupp handelsalumnier
  - 1 MSEK i ytterligare medel krävs



### Sammanfattning

Hedvig är en digital studiecoach som kommer förbättra barns inlärningsprocess och studieresultat

SSE Business Lab kommer öppna många dörrar, men det krävs ytterligare medel för att få ut produkten på marknaden

Hedvig används redan av 20 000 elever och har fått fantastisk feedback



## 2. Ethical out-group condition



### Marknaden för utbildning

Utbildningssektorns storlek = 3x media och underhållning

Marknaden växer med 17% per år

Bara 2% av utbildningen i världen har digitaliserats → Underutvecklad



### Viktiga trender för EdTech

- Det blir vanligare att betala för läxhjälp
  - ◆ Ca 25% av alla barn i Sverige har någon typ av privat läxhjälp
  - ◆ Finns betalningsvilja för läxhjälp, och den växer
- Yngre generationen söker digitala hjälpmedel
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- Tekniken finns redan: smarta algoritmer, maskininläring och artificiell intelligens



## Hedvig...

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- Vi omvandlar innehållet för att passa appen och hur barn bäst lär sig. Sedan lägger vi till interaktiva delar och använder oss av gamification



- Eleven väljer årskurs samt ämne som ska studeras
- Hedvig kommer ihåg allt och ju mer hon används, desto bättre blir hon
- Uppgifter och studieområden rekommenderas baserat på de kunskapsbrister som Hedvig snabbt identifierar

### Fokus på fokus (och belöning)

Hedvig är intuitivt och stimulerande → Bättre fokus

Inga notifikationer tillåts på mobilen när appen används → Bättre fokus

Genom ett samarbete med spännande butiker och kedjor får barn rabatter och erbjudanden efter avklarad plugg → Belöning för fokus!

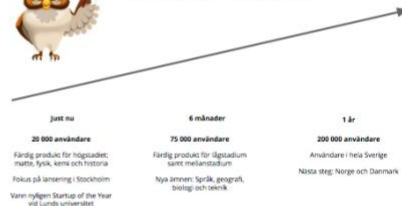


## 100 kr i månaden

Abonnemangsstruktur som ger full access till allt material för en årskurs  
(Det kommer gå att köpa till moduler, till exempel inför de nationella proven)



### Resan framöver



### Finansiering

- Växer med 8 000 användare i månaden
- Nyligen intagna på Lund University Innovation
- Värderade till 20 MSEK (pre-money)
- Söker nu 5 MSEK (3 MSEK för produktutveckling, 2 MSEK för marknadsföring)
  - 4 MSEK har redan säkrats av en grupp alumnier från Lund
  - 1 MSEK i ytterligare medel krävs



### Sammanfattning

Hedvig är en digital studiecoach som kommer förbättra barns inlärningsprocess och studieresultat

LU Innovation kommer öppna många dörrar, men det krävs ytterligare medel för att få ut produkten på marknaden

Hedvig används redan av 20 000 elever och har fått fantastisk feedback



### 3. Unethical in-group condition

## Gamez

### Mobilspelmarknden växer kraftigt

Global tillväxt 2016-2017      Mobilspelmarknden 2017

+30%      \$59bn

F2P (free to play) spel med in-game köp är mycket framgångsrika, e.g. KINGs omsättning 2017 låg på \$2bn

### Möjligheten

Enorm tillväxt av in-game köp + Hög marknadspenetration av smartphones bland unga + Hyfsat outnyttjad ung marknad (7-12 åringar)

= Möjlighet att få enorm marknadspenetration genom att bygga ett extremt socialt F2P (free to play) mobilspel

### Teamet

**CEO - Gustav Qvist**  
Erfarenhet från gaming industry från ledarskap roller  
MSc International Business, Handelshögskolan i Stockholm

**CTO - Olof Ohman**  
Arbetat på ett AAA spelbolag och ett stort tekniskt mobilspelsbolag  
MSc Finance, Handelshögskolan i Stockholm

**CMO - Sara Josefsson**  
Konferens och marknadsföringsexpert  
BSc Business and Economics, Handelshögskolan i Stockholm

Träffades genom projekt och engagemang i Studentkåren på Handels


### Erfarenhet

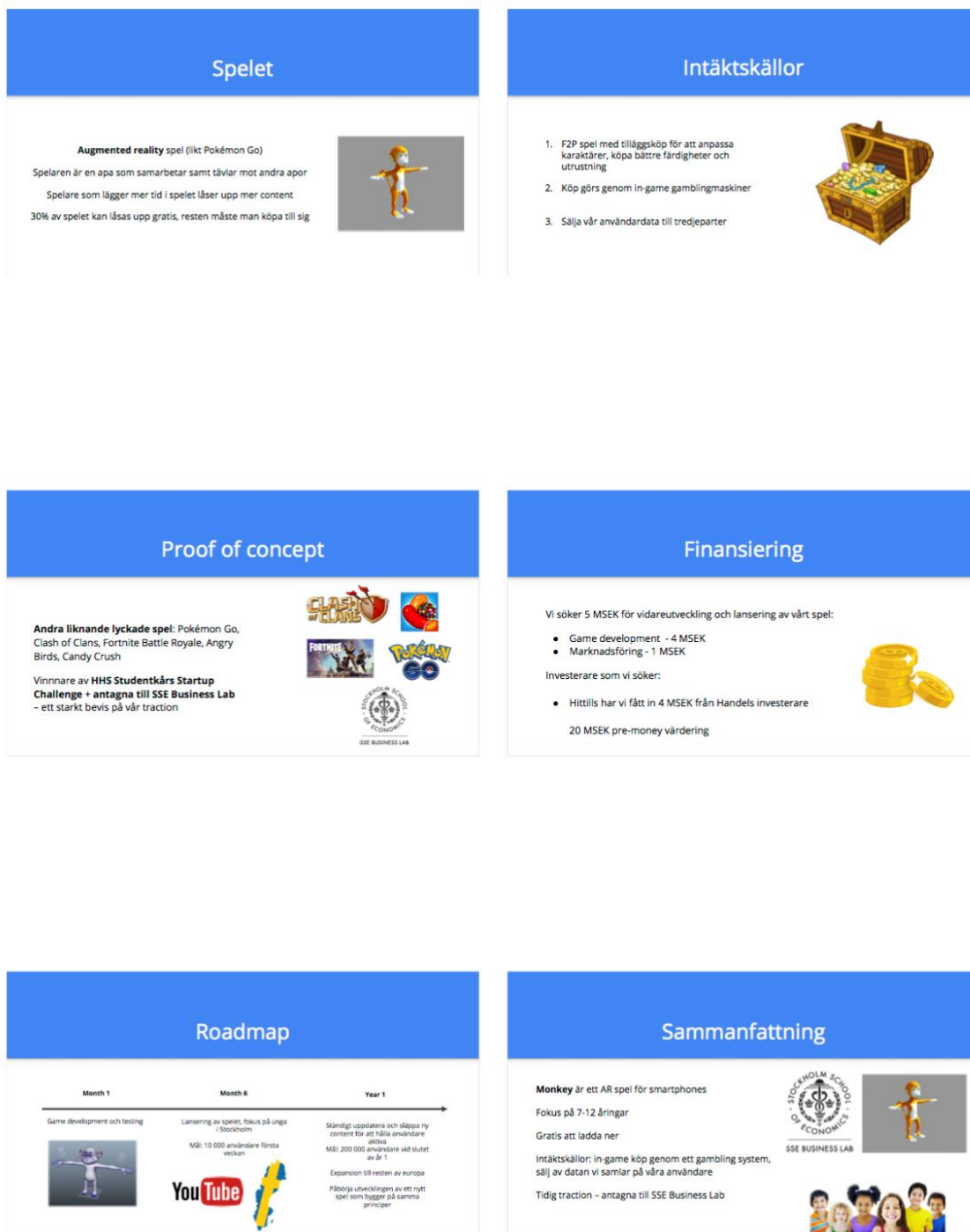
THE STUDENT ASSOCIATION  
Gamez vann Hults Entreprenörskapstävling 2017

SSE BUSINESS LAB  
Efter vinsten blev Gamez antagna till SSE Business Lab och har varit där sedan början på 2018

### Uniqueness

1. Fokus på att skapa "loops" där spelare fastnar i att ständigt uppdatera sin karaktär
2. Använda oss av forskning kring hur man kan skapa beroende liknande mönster genom dopamin- och adrenalinkickar
3. Användning av gamblingmaskiner i spelet för att skapa mer spänning







#### 4. Unethical out-group condition

### Gamez

### Mobilspelmarknaden växer kraftigt

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### Möjligheten

Enorm tillväxt av in-game köp + Hög marknadspenetration av smartphones bland unga + Inflytelser utomspels utgåva (7-12 åringar)

= Möjlighet att få enorm marknadspenetration genom att bygga ett extremt socialt F2P (free to play) mobilspel

### Teamet

**CEO - Gustav Qvist**  
Erfarenhet från gaming industrin  
MSc International Business, Lunds Universitet

**CTO - Olof Öhrman**  
Arbetat på ett AAA spelbolag och ett stort svenskt mobilspelsbolag  
MSc Finance, Lunds Universitet

**CMO - Sara Josefsson**  
Konstaterings och marknadsföringschef  
MSc Business and Economics, Lunds Universitet

Träffades genom projekt och engagemang i Lundskommittén, studentnätverket för ekonomistudenter i Lund

### Erfarenhet

**LUNDS UNIVERSITET**  
Ekonomihögskolan


Gamez vann Lunds Universitets Entreprenörskonstävling 2017

**LUNDS UNIVERSITET**  
LU INNOVATION  
THE LINK BETWEEN ACADEMY AND BUSINESS

Efter vinsten blev Gamez antagna till Lund Innovation Lab och har suttit där sedan hösten på 2018

### Uniqueness

1. Fokus på att skapa "loops" där spelare fastnar i att ständigt uppdatera sin karaktär
2. Använda oss av forskning kring hur man kan skapa beroende liknande mönster genom dopamin- och adrenalinkickar
3. Användning av gamblingmaskiner i spelet för att skapa mer spänning



## Spelet

### Augmented reality spel (likt Pokémon Go)

Spelaren är en apa som samarbetar samt tävlar mot andra apor

Spelare som lägger mer tid i spelet läser upp mer content

30% av spelet kan låsas upp gratis, resten måste man köpa till sig



## Intäktskällor

1. F2P spel med tilläggsköp för att anpassa karaktärer, köpa bättre färdigheter och utrustning
2. Köp görs genom in-game gamblingmaskiner
3. Sälja vår användardata till tredje parter



## Proof of concept

Andra liknande lyckade spel: Pokémon Go, Clash of Clans, Fortnite Battle Royale, Angry Birds, Candy Crush

Vinnare av Lunds Universitets Startup Challenge + antagna till Lund Innovation Lab - ett starkt bevis på vår traction



## Finansiering

Vi söker 5 MSEK för vidareutveckling och lansering av vårt spel:

- Game development - 4 MSEK
- Marknadsföring - 1 MSEK

Investorare som vi söker:

- Hittills har vi fått in 4 MSEK från Lund investerare

20 MSEK pre-money värdering



## Roadmap



## Sammanfattning

**Monkey** är ett AR spel för smartphones

Fokus på 7-12 åringar

Gratis att ladda ner

Intäktskällor: in-game köp genom ett gambling system, sälj av datan vi samlar på våra användare

Tidig traction - antagna till LU Innovation

