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**Trust and reciprocity factors with a focus on
gender : theory and experiments**

Introduction

Trust and reciprocity are could be driven by different variables, but these variables are not exactly the same. Trust and reciprocity are two sides of the same coin but they do not depend on the same internal and external factors but rather are manipulated by sometimes conflicting elements. Trust and reciprocity in business exchanges or in everyday relationships in general, especially economic ones might seem like two very similar elements that are sometimes even mistakenly interchanged. However, they are two different words and two different elements, which, however, we can say are two sides of the same coin and therefore have relationships with each other.

The purpose of this thesis is to analyze what kind of factors influence these two elements and especially how. So there will be a part that will introduce these two feelings, what they are and where we find them in everyday life; then there will be a less theoretical part focused on methodologies to study trust and reciprocity. Methodologies and experiments that have already been done and will be commented on and reported and an experiment that will be done by me and explained. This last experiment will be crucial to better understand the difference between these two feelings and to understand what influences them and how.

Every human relationship involves some level of trust, and trust is linked to a society that is more productive, equal, and healthy. It may be described as an optimistic perspective in the face of uncertainty imposed on by social interactions. In both permanent and temporary work groups, trust makes cooperative conduct possible, makes organization easier, and is linked to greater job satisfaction, cheaper labor costs, and better profitability. People trust bankers with their money in the hopes that they won't steal it; they trust their own home and allow total strangers to remain there; and they even trust physical effort, such as when helping a neighbor relocate. In these circumstances, trust plays a variety of functions, thus it appears crucial to comprehend similarities and differences.

Humans exhibit reciprocity by returning beneficial or hurtful actions in kind, even when doing so may have a cost. This is how trust is usually justified. Similar to trust, reciprocity manifests itself in several ways: in the aforementioned cases, the banker will work harder to increase the profits of the loyal investor, and a guest who recently stayed for free at someone else's home will be more inclined to explore hosting as well. If two individuals contact often, the cost of not reciprocating but instead taking advantage of the other person must be weighed against the potential loss of future cooperation. However, there is little immediate risk of such retribution if couples only engage once.

However, even in one-off contacts, people have a propensity to reciprocate, but it is considerably more challenging to see comparable behavior in other animals. Since the typical long-term recurring connections between family or neighbors are gradually being replaced by one-time interactions between anonymous parties in the contemporary global market, reciprocity in single encounters is of particular interest to economists. The existing economy may then benefit greatly from a deeper comprehension of reciprocity in one-shot encounters in all of its many situations.

The discipline of labor economics has gradually come to understand the value of trust and reciprocity. Trust fosters reciprocity and improves a group's capacity to cooperate. Effort also appears to be impacted. For instance, a supervisor's strong control may result in less job effort since it is interpreted as a sign of mistrust.

Furthermore, although the link between trust and effort is not entirely evident, group trust appears to influence members' level of productivity. According to several research, higher levels of trust might boost group effort and productivity. Contrarily, it has also been suggested that in some circumstances, individuals who lack trust would actually put in more effort while working in a group to compensate for the supposedly poor performance of their coworkers. In turn, reciprocity not only strengthens trust but also has the potential to boost employee productivity, serving as a powerful tool for contract enforcement.

CHAPTER 1

Trust and reciprocity

1.1 Trust

All human interactions, including romantic ones, those in families, businesses, politics, and the medical profession, revolve around trust. It is considerably more difficult to gain from your doctor's or psychotherapist's expert advice if you don't trust them.

What is trust?

Here are a few options:

One of the actions that make up trust is depending on someone else.

Trust is a belief in the likelihood that someone will act in a particular way.

Trust is an abstract mental attitude toward the idea that someone may be relied upon.

Trust is the conviction and security that a partner genuinely cares.

Trust is a sophisticated brain process that links various representations into an emotional semantic pointer.

When someone treats you well and compliments you, for example, this is behavior that shows trust. However, these behaviors just show the internal mental state of trust that generates them, not the actual trust.

Although estimating the likelihood of someone's action may be necessary when developing trust, most people develop trust without having a clear understanding of probability or the capacity to predict someone's behavior with any degree of certainty. According to some philosophers, trust is an abstract relation between an abstract self and an abstract meaning of the sentence, or a propositional attitude. The nature of these identities, relations, and meanings, however, is completely enigmatic.

Trust is the readiness of one party (the trustor) to open up to another party (the trustee), with the expectation that the trustee will act in the trustor's

best interests. In addition, the trustor has no influence over the trustee's decisions. Because the trustor does not know how the trustee's activities will turn out, he or she can only create and assess expectations. These assumptions about the trustee's motivations are made in light of their characteristics, the circumstance, and their interactions. The danger of failure or harm to the trustor if the trustee behaves inappropriately is what causes the uncertainty. The variations of trust are a topic of continuous study in the social sciences. The degree of one party's trust in another is a measurement of that party's belief in that other party's honesty, fairness, or goodness. For a belief in the other party's competency, the word "confidence" is more appropriate. If a trust issue is perceived as a failure of skill rather than a loss of kindness or integrity, it may be easier to forgive. In economics, trust is frequently seen as transactional dependability. In all situations, trust is a heuristic judgment rule that enables a person to handle complications that would necessitate unreasonably high levels of effort if they used rational reasoning.

1.1.1 Definitions of trust

This section lists the components that definitions of trust in the field of economics but not only.

Most definitions of trust include a component of risk. According to Luhmann trust "presupposes a state of risk"¹.

Nevertheless, Coleman ²makes the strongest case for risky activity as a specific attribute of trust when he refers to trust-based circumstances as "a subtype of those including risk." Trust-based situations include danger since it is impossible to predict what other people will do next. This viewpoint claims that trust is only justified when an agent anticipates a beneficial outcome from exposing himself or herself vulnerable to another agent (whose behavior is beyond of his or her control). Through this calculation, an agent permits uncertainty about a potential action of

¹ Luhmann N. (1988). Familiarity, confidence, trust: Problems and alternatives *Trust: Making and breaking cooperative relations* (pp. 97).

² Coleman, J. S. (1990). Foundations of social theory. *Choice Reviews Online*, 27(11), 27–6637

another agent to influence his or her own decision before being able to observe that action³.

If one agent chooses to put themselves at danger of another agent acting opportunistically, this is interpreted as evidence of trust (Coleman 1990). Trusting someone to act is the only thing that has value. Trust is a three-part relationship, according to Hardin⁴: "A trusts B to do X." A can have faith in B to carry out task X but mistrust B in task Y. In this sense, trust differs from the more general idea of trustworthiness in that it is always unique to a specific action of another. As noted by Dasgupta (1988: 53-54) the concept of "trustworthiness" focuses on a person's general outlook, motivation, and the degree to which he values his own honesty. On the other hand, in order to be able to trust someone to carry out what they promised, we need to understand both the situational factors and the person's attitude. Even a trustworthy individual may be counted on to be unreliable if the incentives are "correct". Agents can only create trust when they have a choice. Agents must be allowed to work together on both sides of a transaction. When cooperation is coerced and unequal, it differs greatly from cooperation that is based on mutual trust. According to Lorenz⁵, trust-based action exchanges and the associated dangers of abuse must be seen as preventable. The ability to avoid the relationship is crucial. If you were unable to, you may state, "I have no option but to trust this person, institution, etc." It is obvious that we do not need to use trust to justify our behavior when there is no other option.

Therefore, trust is the decision of an agent to expose himself or herself to the danger and uncertainty involved in a certain future action of another. In Coleman's formalization of the calculus that agents use to determine whether or not to trust someone, he integrates the following elements:

$$G \cdot p > (1-p) \cdot L$$

³ Dasgupta, P. (1988). Trust as a commodity.

⁴ HARDIN, R. (1993). The Street-Level Epistemology of Trust. *Politics & Society*, 21(4), 505–529

⁵ LORENZ, E. H. (1992). Trust and the Flexible Firm: International Comparisons. *Industrial Relations*, 31(3), 455–472

Where G represents the potential gain if the other actor performs honestly,

p represents the likelihood that he will,

L represents the potential loss if he does not.

1.1.2 Trust and “benevolence”

In social theory, we must distinguish clearly between the two fundamental elements and actions of pro-social relations:

- On the one hand, goal-adoption, the desire to favor the other and do something for him;
- on the other hand, the propensity to depend on the other and assign him to further our objectives and ensure our welfare.

Realizing that this fundamental pro-social structure is bilateral but not symmetrical is crucial.

Pro-social bilateral relationships do not begin with "reciprocation" (which requires some symmetry), but rather with some kind of "exchange." On one side, it reacts to that inclination and to an act of doing something for the other, an act of goal-adoption (Spinoza's "benevolence"); on the other, it responds to that disposition and to an act of expecting on the other, of being dependent on, of seeking adoption. Despite the fact that both are pro-social and may be combined, "benevolence" and "trust" do not at all refer to the same action or disposition; rather, they refer to two distinct but complimentary actors and roles.

As we just saw, benevolence and trust are complimentary and connected to one another, but they may also exist separately and only be "unilateral" under certain circumstances. Y doesn't have to be kind to X in order for X to rely on and trust him. Not just in the sense that X 's expectations are unmet and Y will let her down, but also in the sense that X may effectively rely on Y and take advantage of Y 's "assistance" without Y 's knowledge or consent. On the other hand, Y is free to unilaterally accept X 's objectives without X 's consent or even awareness.

Furthermore, benevolence and trust do not always coincide and mirror one another. Even if Y knows that X trusts him and X knows that Y doesn't trust him and both know about each other thoughts. In a same way, trust does not demand equality. Between the trustor and the trustee, there may be asymmetric power relationships: Y may hold far more influence over X than X does over Y (similar to a father-son relationship), or vice versa. When there is a bilateral, symmetrical, and maybe "reciprocal" goal-adoption (where the "help" of X to Y is also due to the assistance of Y to X, and vice versa), there is adoption and dependence on both sides. In conclusion, trust is not a sentiment or a disposition held by the "helper" but rather by the expecting beneficiary. Only when the help (goal-adoption) is necessary for the other to take some action does the helper feel trusted (for example, some reciprocation). X is "cooperating" with Y in this situation and trusting Y, but only because X is hoping for something from Y. More specifically, X is "cooperating" because she is trusting (in the hopes of receiving something in return); otherwise, she wouldn't; this is the interesting assertion for economics.

As we have stated, this is merely a very strange circumstance and is not at all conducive to the development of the concepts and theories of "trust" and "cooperation."

Trust is "psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another"⁶. Be aware that the phrase "positive expectations about the intentions or actions of the trustee" does not always refer to a gesture of recompense but rather has a much wider definition. Y can help X—upon whom X depends—without expecting anything in return from X. And on the other hand, X may have faith in Y and depend on Y's actions without having rendered any favors to him (like a son towards his parents). Putting your faith in someone else's behavior or intentions in exchange for your trust is just an odd sub-case. Noting that the choice/intention is not about "doing anything for the other," "helping him," or "cooperating" with him, it should be noted that the act of trusting

⁶ Rousseau, D., Sitkin, S., Burt, R., et al. (1998) Not So Different after All: A Cross Discipline View of Trust, 395

is not inherently a cooperative act. The trustor X, on the other hand, appears to be trying to take advantage of the other and is hoping for some form of "assistance" from the other (intentional or non-intentional). Of course, in certain circumstances, the choice to help the other person—which is not the same as choosing to trust him—can be combined with and even be based on the choice to do so. In these situations, X is relying on Y to take a step that will benefit her as a result of her own decision to help Y. In fact, one instance is when X helps Y while hoping or expecting a favor in return from Y.

This is not the only instance of actively influencing (manipulating) Y's behavior in order to get the desired result: X might also try to get Y to take a self-serving action without expecting anything in return for her "help," just as a natural behavioral outcome of Y's independent goals and plans. For instance, X might present Y with a gun since she knows that he hates Z and she wants Y to murder Z. (not for X but for his own reasons). Similarly, X does not always expect an adopting act from Y and trusts him for this (decides to rely on him to achieve her purpose) as a "recognition" of her own "adoption." However, this is an important family of situations, with several sub-cases, each significantly different from the others from a cognitive standpoint.

In some circumstances, X relies on Y's feeling of appreciation, on an emotive reciprocation incentive. In other circumstances, she believes Y is interested in future interactions with her. In other circumstances, X is solely reliant on Y's sense of honor and sensitivity to agreements and obligations.

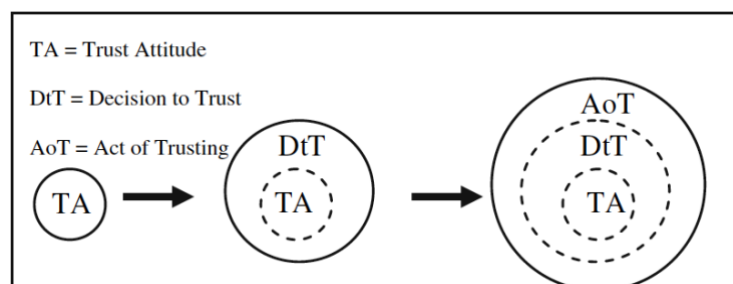
In other circumstances, she is aware that Y is conscious of the law and is concerned about the authority and its consequences. In these situations, "cooperating" is viewed as a means of securing Y's adoption and/or conduct. Either X or she wishes to offer Y with conditions and instruments for his autonomous action based on independent reasons, or she wishes to provide Y with motives for performing the desired action.

1.1.3 Why we decide to trust somebody

Trust is, first and foremost, a mental attitude consisting of ideas about the trustee and his behavior.

- (1) X feels that Y is capable and willing to take the necessary step.
- (2) X believes that, as she hopes, Y will perform the action appropriately.
- (3) If X believes that Y is not harmful, she will be safe in her relationship with Y and will be less defensive and more vulnerable. The first (and third) family of beliefs are "evaluations" of Y: trusting Y implies having a positive evaluation of him. Trust needs some evaluation. The second (and third) type of belief is "expectations," which are predictions about Y's conduct that are important to X's goal: X both wishes and forecasts a particular action A of Y, while excluding negative events; she feels protected. The fundamental nucleus of trust, as a mental disposition toward Y, is a positive expectation based on a positive judgment, plus the notion that X requires or may require Y's action⁷

However, trust is not limited to a (positive) judgment of Y and a future willingness to rely on him. This potential can be turned into an act. Based on such an estimate and anticipation, X can decide to trust Y with a certain "task," that is, to realize a specific goal through the competent activity of Y. "To trust" is a decision as well as an action. The decision to trust is the decision to rely on another person to achieve our own objectives; the intention to rely on the other, to entrust the other with our well-being.



As a result, a conceptual and layered model is provided . There is a central core of trust attitude, which includes X's goal and several beliefs of X: the belief that Y would be able to realize such a goal (positive evaluation of

⁷ Castelfranchi, C., & Falcone, R. (2010). Trust Theory: A Socio-Cognitive and Computational Model

Y); the belief that Y would actually do the required action A for realizing the goal (positive expectation); the belief that X would require Y's action, which is dependent on Y; and the belief that the goal would be realized. Not only does X believe in Y (as in completing the action), but he also believes that the goal will be accomplished.

When X arrives at the "decision" to rely on Y on such a basis, there are additional mental ingredients; at the very least, the decision and thus the goal of betting on Y rather than personally pursuing the goal, and the goal (not just the "prediction") that Y is able and will actually do the required action. What is important is the "degree" of trust. Is trust, both as an evaluation and as an expectation, sufficient to entrust Y with something? To rely and gamble on him? How significant is the perceived risk? In this approach, the decision to trust or not trust Y for a specific goal/task is difficult. This is determined not just by X's level of trust in Y, but also by the goal's worth, the perceived risk, a risk acceptance level, and so on. This means that we don't always and certainly don't always entrust a very trustworthy individual, or delegate the most trustworthy guy among potential partners; it all depends on cost, etc.

The critical aspect, though, is how to determine the degree of trust. In a belief-based paradigm, it follows directly from the degree of certainty of the beliefs (and from the probable degree of Y's "qualities"). The more certain I am that Y is competent and capable; the more certain I am that he intends to execute the action and will actually do it, the more I trust him for that activity.

1.2 Reciprocity

The act of exchanging items with others in order to benefit both parties is known as reciprocity. According to the rule of reciprocity (also known as the norm of reciprocity), if someone does something for you, you are expected to do the same for them. The process of socialization is crucial in fostering this demand for reciprocity. Children get the ability to share, take turns, and engage in reciprocal behavior via experience. The establishment and maintenance of relationships depend heavily on reciprocity. It is crucial for influencing people to adopt specific attitudes or habits⁸.

If you've ever felt compelled to repay someone for anything they did for you, you were probably adhering to the reciprocity standard. This is only one form of social norm that has a significant impact on how we behave. Three primary types of reciprocity exist⁹:

Generalized reciprocity: This type frequently entails trades between members of families or social groups. People just do something for another person based on the presumption that the other person would do the same thing for them; there is no expectation of a returned favor.

Altruism and this kind of reciprocity are connected.

Balanced reciprocity: This kind entails calculating the worth of the trade and expecting the favor to be repaid in a predetermined amount of time. For instance, someone could trade what they have—a talent or material possession—for something else that they feel to be of similar worth.

Negative reciprocity: This type of reciprocity arises when one party tries to benefit more from the trade than the other. One illustration of negative reciprocity is the sale of a desperately needed item at an exorbitant price.

Reciprocity is a social rule in social psychology that rewards good deeds by responding to them with further good deeds. As a social construct, reciprocity implies that individuals usually behave considerably more kindly and cooperatively in reaction to friendly activities than would be

⁸ *Why Do We Feel Compelled to Return Favors?* (2022, October 18). Verywell Mind. <https://www.verywellmind.com/what-is-the-rule-of-reciprocity-2795891>

⁹ Juillion, P. (2020, May 11). *What are the 3 types of reciprocity?* Studybuff. <https://studybuff.com/what-are-the-3-types-of-reciprocity/>

expected by the self-interest model; in contrast, they regularly behave much more vilely and even brutally in response to hostile actions. Altruism is the unconditional act of offering social gifts without any hope or expectation of future favorable replies. Reciprocal activities are different from altruistic actions in that they only follow from others' initial actions. Some make a distinction between ideal altruism (providing without thinking about receiving something in return) and reciprocal altruism (giving with limited expectation or the potential for expectation of future reward).

1.2.1 Notion of reciprocity

In terms of economics, reciprocity is both a new and an established concept. Since Adam Smith and the discipline's founding fathers, political economy has been linked to exchanges. If we use the term to refer to a mutual relationship in which two or more subjects give and receive either simultaneously or sequentially, then exchange inevitably entails some form of reciprocity. Due of this, reciprocity cannot be reduced to simple joint action, unconditional giving, or basic altruism. In actuality, the Latin word *reciprocus* (retro-procus) implies "moving back and forth" (giving and receiving). In other words, the idea of equal give and take is not logically identical to the underlying meaning, which is one of mutual trade. The idea of unconditional behavior, or the pursuit of happiness without anticipating anything in return, is the reverse. According to psychology, this unconditional behavior is the early form of the primitive object relation that distinguishes children in their attachments and, if uncontrolled, may later result in pathologic narcissism. Adults, however, replace this need for unconditional commitment with reciprocity. Therefore, from a psychological perspective, reciprocity should be the norm for behavior in social interactions between normal individuals. Due to this, the concept of reciprocity is a dated one in the social sciences and economics as general. However, up until recently, the version of reciprocity that was familiar to mainstream standard economics was primarily the one exemplified by the market trade, which was based on a contractual basis. With the growth of game theory, economics also

developed a second perspective on reciprocity, the so-called folk-theorem, which states that in situations where cooperation is the best long-term strategy but defection and opportunism are the best one-shot strategies, reciprocity can emerge and maintain cooperation if the relations are repeated an infinite number of times. In order to build a long-lasting and more lucrative cooperative relationship, participants may be encouraged to forego an immediate benefit if they are aware that there is a positive, if modest, possibility that there will be one more round. In this form, reciprocal behavior can develop naturally from self-interest without requiring the assumption of ulterior intentions. These two types of reciprocity (contractual and repeating game) define cooperative behavior in terms of homo economicus's normative reasoning. From a motivational perspective, self-interest is all that is required; altruism, intrinsic drive, and fairness—the fundamental concepts of the "new" reciprocity—are not required for this type of reciprocity¹⁰.

In fact, researchers often mean something more, and frequently something distinct from, this earlier conception of reciprocity and collaboration, when they discuss reciprocity in the social sciences today. Contrary to what contractual trade and the folk theorem claim, reciprocity is really a far more complicated notion that applies to a much larger range of circumstances. The pieces that make up this special issue focus on this "new" reciprocity, or more specifically, on this innovative method of thinking about reciprocity and its function in social interaction. The concept of reciprocity examined under this new paradigm is referred to as "strong reciprocity" in order to separate it from the two approaches to the subject. This important early study by Rabin was eventually expanded into a Hypothesis of Reciprocity (2006) by key proponents of the "strong reciprocity" theory Falk and Fischbacher¹¹. Their approach accords intentions a crucial role, exactly like the one they accept from Rabin. Intentions alone, they note, "cannot be the whole story" (Falk and

¹⁰ Cruz, V. (2021, November 23). *What is reciprocity? Definition and meaning*. Market Business News. <https://marketbusinessnews.com/financial-glossary/reciprocity-definition-meaning/>

¹¹ Fehr, E., Fischbacher, U., & Gächter, S. (2002). Strong reciprocity, human cooperation, and the enforcement of social norms. *Human Nature*, 13(1), 1–25

Fischbacher). They think that players' perceived friendliness and reciprocity throughout the game, as well as their ability to earn benefits, determine their utility. Like many other economists who have studied this topic, Falk and Fischbacher employ the words "positive reciprocity" and "negative reciprocity" to describe a kind reaction to a kind action and, correspondingly, a hostile reaction to a hostile action. Additionally, they point out that these reactions, whether kind or cruel, in the situation of reciprocity cannot be explained for on the basis of self-regarding desires limited to financial rewards. The findings imply that reciprocity is, in reality, a form of norm that may foster cooperative relationships and boost social well-being, particularly in situations where it is not possible or imaginable to come to an agreement on a contractual restriction.

1.2.2 Reciprocity and self-centered behavior

Along with the birth and development of experimental economics and behavioral economics over the past years, a new application of the term reciprocity as a new type of economic reasoning has evolved. Recognizing the novelty of this application of reciprocity does not imply that there have never been theories of non-self-interested or altruistic behavior in the field of economics. In fact, some marginalist economists—Edgeworth among the first at the end of the nineteenth century—had proposed that agents might engage in non-self-interested behavior even in an economic context.

However, these behaviors were not thought to be particularly important in explaining economic phenomena, which were then conveniently limited to the simple but realistic supposition that when operating in the market, agents do not consider the welfare or humanity of other agents but only their own.

Then, a new set of findings offering solid and reliable evidence of economically important behaviors not driven by self-regard emerged through empirical and experimental research. One of the early "errors" to be looked at was cooperative options discovered through prisoner's dilemma studies (even in one-shot interactions): "Laboratory tests

consistently show that some agents defect while others cooperate (Samuelson).

The speculative explanations for such a "anomaly" focus on particular presumptions. Sugden's (1984) theory, which explains spontaneous contribution to public goods on the basis of the concept that each agent has her own view of what level of contribution (X) he would wish others to provide, is one of the early theoretical models. The agent feels morally obligated to contribute by at least X if the effective contribution is equal to or more than X: "I shall name this the principle of reciprocity" (Sugden's). In order to explain the evolution of reciprocity, Sugden's model uses the idea of "moral rule": because the ethic rule is viewed as an alternative to "rationality," the origin of reciprocity is explained without mentioning it. In contrast to the conventional view of rationality (as selfish and economic maximizing), a social norm is logical in a different sense. In this instance, the agent does not consistently arrive at a decision by calculation, but rather by rationally conforming to an ethical code that is applicable to a variety of behaviors. These ideas, however, still fall within the conditionality category since reciprocity is not an absolute social norm and it is dependent on other participants' reactions. Many of the earliest research on reciprocity were founded on the premise of altruism, but it quickly became apparent that this was insufficient to explain anomalies and match the experimental data; instead, more sophisticated assumptions based on relationships and motivations were required. In this context, the 1990s saw the introduction of concepts like iniquity aversion (Fehr and Schmidt)¹², team-thinking (Sugden)¹³ and more. Rabin was one of the first writers to officially include the idea of reciprocity in a theoretical framework (1993).

In the first words of his now-classic article published in the *American Economic Review*, Rabin formalizes his core thesis using psychological game theory: "People may care not only about their own well-being, but also about the well-being of others. Yet psychological evidence indicates

¹² Fehr, E., & Schmidt, K. M. (2010). On inequity aversion: A reply to Binmore and Shaked. *Journal of Economic Behavior & Organization*, 73(1), 101–108.

¹³ Sugden, R. (1993). Thinking as a Team: Towards an Explanation of Nonselfish Behavior. *Social Philosophy and Policy*, 10(1), 69–89.

that most altruistic behaviour is more complex: people do not seek uniformly to help other people; rather, they do so according to how generous these other people are being'' (Rabin 1993).

This theory claims that agents do not have a generalized generosity (or lack of same) toward others, but rather exhibit some conditionality and selectivity in their reciprocating behavior: "Indeed, the same people who are altruistic to other altruistic people are also motivated to hurt those who hurt them" (Rabin). Therefore, depending on the intents they associate with other people's behavior, people "respond" to it in various ways. Depending on the options accessible to the decision-maker at the time of the choosing, the same action might be interpreted as either helping or damaging. Because of this, Rabin's study and the literature generally on reciprocity place a lot of emphasis on the significance of intentions. In the equilibrium model, he suggests a basic set of equations that captures the process used by the agent as he seeks to discern the intents of other agents and measure their level of (un)kindness. The agent considers what the other could have done and did not do in addition to the way that he actually acted. Rabin's theory of psychological games has undergone substantial development and has been the focus of experimental applications, both in its original form and in later iterations that were expanded to dynamic environments.

Initially, Rabin's thesis was founded on what he called "stylized facts," or generic folk-psychological observations made in ordinary circumstances. However, in recent years, the wealth of empirical data from well planned laboratory experiments has led to questions about the rational egoism paradigm, which has marked a scientific significant shift for economic studies on reciprocity. In order to analyze actual human behavior, a more pragmatic methodology has consequently arisen.

New models and ideas have emerged from this experimental literature, giving game theory, decision theory, and behavior analysis more generally the fundamental tools they need to work. In these theories, reciprocity is viewed as both an experimentally observable phenomena and a theoretical presumption intended to explain anomalies in theories based on self-centered behavior. Reciprocity is a key component in all of them, and

experiments with countless variations of the gift-exchange game, the public-good game, the ultimatum game, and the dictator game have revealed behaviors in which players are likely to trust and to reacting more generously than rational choice theory would predict.

Numerous studies show that market participants (at least in classroom interaction) are prepared to accept reduced financial gains in order to reward or penalize other participants based on the reciprocity norm.

Fairness is one explanatory variable that many reciprocity theories use to explain reciprocity: the other player gets rewarded (or penalized) depending on whether she was persuaded to act properly (or unjustly) in the first place. In this method, intentions are crucial. The core element of Rabin's theory¹⁴ is that when a player plays nice, there is also a "psychological" pay-off in addition to a financial one (whereas in monetary terms not). Comparing this viewpoint with other theories of fair behavior that focus on the interaction's outcome rather than the action itself, is necessary. People are prepared to give up some money in order to generate a more equitable distribution of payoffs, according to this distributional view of fairness.

The key distinction between this explanation and theories of reciprocity is that in the first, agents are primarily forward-looking, whereas in the latter, agents are backward-looking and capable of sophisticated conditional reasoning.

¹⁴ RABIN, M. (2011). Incorporating Fairness into Game Theory and Economics. *Advances in Behavioral Economics*, 297–325.

1.3 Neoclassical theory vs reality

The core of the neoclassical theory of rational economic conduct is the idea that people only behave in their own best interests. This guiding concept enables economists to develop accurate models that monitor and forecast outcomes in competitive markets with effective supply and demand dynamics, enforced property rights, and full transparency. These fundamental assumptions are present in many relationships, but assumptions about intents, partial knowledge, imperfect markets, and partial property rights are frequently present in economic interactions.

According to neoclassical theory from the economic point of view, man in order to maximize his own economic well-being must of necessity behave selfishly, only in this way he can get the most.

If man decides to place trust in another individual by giving up part of his own economic well-being, he runs the risk that this second individual will behave selfishly and decide not to reciprocate the trust given to him.

Precisely for this reason and because man is theoretically risk-averse and always prefers a secure welfare rather than an uncertain plus, he is "obliged" by neoclassical theory to behave selfishly without placing trust and without reciprocating.

That said, we would expect an almost "mathematical" feedback in everyday life, and thus we will find ourselves having to comment on economic and noneconomic situations that always highlight only this selfish attitude aimed at maximizing one's own profit.

However, this is not always the case in fact we find many situations where neoclassical theory is disproved and we often see altruistic behavior even in economic situations.

The expectations of simply selfish conduct often contrast with the real findings of "less perfect" interactions between people. As early as Smith's work, the divergence from self-interest in these exchanges, when people express concern for others' well-being, fairness ideals, or a general propensity to empathize, has been observed.

Evidence that supports the idea that rational economic behavior may involve an interest in the welfare or actions of others, or, at a least, a divergence from pure self-interest, has been growing since economists started using experimental techniques and contingent valuation. The distribution of financial benefits was further reinforced by actual data, and economists started to take into account other people's wellbeing, their behaviors, and their intents as potential explanatory factors in economic behavior.

An understanding of the empirical deviations from selfish conduct was required as a result of the examination of bilateral interaction. Researchers discovered participants giving up guaranteed fiscal rewards for the nonmonetary benefit of a trade between two people. In certain cases, the second movers maximized their own rewards without taking into account the proposer's identity or the original activity. In other instances, the first mover's generosity or the perceived justice of the original action led the responder to participate in reciprocal activity.

Beyond the interpersonal interaction, each participant had the option of maximizing their own financial gain or paying an opportunity cost in order to reach a higher collective maximum.

Responders were also shown reacting to the acts or intents of the original participants in successive exchanges. The empirical evidence against selfish behavior suggests that a more exhaustive or comprehensive understanding of human behavior is required to investigate the causes of subjects' cooperation in exchange and bargaining, contribution to the common good, cooperative gaming, and pursuit of social maxima as opposed to personal gain.

Understanding the functions of trust and reciprocity is essential to forecasting economic behavior since bilateral and group interaction may influence effort in the workplace, the durability of interpersonal relationships, the degrees of trust in virtual transactions, and the effectiveness of markets.

Numerous instruments are available in economics to help one comprehend the underlying motivations for trading involving social preferences, trust, dependability, and reciprocity.

Initially, Akerlof suggested "trust" in economic models as a solution to the "lemons" problem, which arises when there is asymmetry in the knowledge

regarding quality¹⁵. The notion of intentions and the notion of fairness in transaction were put to the test by Kahneman. To identify acceptable reasons for raising product pricing or reducing employee compensation, the empirical approach used telephone surveys. The writers posed inquiries like: A hardware shop has been charging \$15 for snow shovels. The retailer boosts the price to \$20 the morning following a significant snowfall. Rate this activity as follows:

Completely Fair - Acceptable - Unfair - Very Unfair¹⁶.

The framing of the interaction, according to the authors, was crucial to how fairly consumers and staff saw the situation. The context of how profit and loss were distributed, the initial reference transaction (defined by market prices, competitors' posted prices, and prior transactions), and the underlying motivation for the firm's actions (profit reduction, profit increase, or increases in market power) all had a significant impact on how fairness was perceived. According to research by Kahneman, notions of fairness were highly impacted by prior transactions and societal norms. While companies pursuing profit gains, particularly by leveraging improvements in market dominance, were seen as acting unfairly, corporations responding to profit decreases with higher pricing or salary reductions were considered as fair. The notion of pure self-interest was effectively challenged by using a poll to evaluate trust and fairness.

To better understand trust and reciprocity, other contingent valuation and revealed preference techniques have been applied, but controlled laboratory and field studies have yielded some of the most significant findings. The dictator game, trust game, lost wallet game, and ultimatum game are the most popular educational games for teaching trust and reciprocity.

¹⁵ Akerlof, G. A. (1970). The Market for "Lemons": Quality Uncertainty and the Market Mechanism. *The Quarterly Journal of Economics*, 84(3), 488.

¹⁶ Kahneman, D., Knetsch, J. L., & Thaler, R. H. (2000). Fairness as a Constraint on Profit Seeking: Entitlements in the Market. *Choices, Values, and Frames*, 317–334.

The notion that everyone is, or may be expected to be, driven only by self-interest has long held power as an economics postulate and even a dogma. However, since the 1980s, experimental economists' findings have been raising serious doubts about this basic motivating assumption of conventional economic theory. Test subjects took part in a variety of activities with actual financial rewards in a number of laboratory studies conducted across the world. It became out that their actions could not be adequately described by the human behavior theory of pure self-interest. In games like the Prisoner's Dilemma, the Trust Game, the Ultimatum Game, and the Dictator Game, some players frequently chose strategies and actions that are better described as altruistic, fair, or reciprocal behavior rather than purely self-interested behavior. This is true even though there was a dominant strategy for purely self-interested players that was clearly identifiable, players repeatedly chose another strategy. This outcome has held true in a variety of experiment designs. To understand the players' altruistic, just, or reciprocal conduct in laboratory trials, other motivations must be taken into account .

1.3.1 Experimental Evidence for Reciprocal Behavior

The Trust Game is the experimental game that is most commonly used to study reciprocal conduct (or Investment Game). The Trust Game is played by two agents, a first mover and a second mover. The first mover chooses how much of an initial endowment she wants to deliver to the second mover at the start of the game. Before it reaches the second mover, the quantity transmitted is tripled. The second mover then chooses how much of the money received she wishes to return to the first mover. The second mover's "final payout" is the amount received less the amount he gave back to the first mover. The "final payoff" of the first mover is the sum of the money he did not give to the second mover plus the money he sends back to her. The amount sent by the first mover is typically referred to as a measure of "trust," while the amount returned by the second mover is referred to as a measure of "trustworthiness" or "reciprocity."

The Trust Game contains a social problem if we suppose that both agents are acting solely in their own self-interest (i.e., that actors only care about their own personal payoffs).

Due to the fact that each monetary unit (MU) transferred from the first mover adds two MUs to the overall compensation as explained above, the players' ultimate payout will only be at its highest total sum if and only if they transmit the second mover their full endowment.

The second mover, on the other hand, has no need to send anything back if she is acting only in her own best interests. It makes sense for the "first-mover" to withhold anything from the "second-mover" since she retains everything for herself. Therefore, according to conventional rational choice theory, agents preserve their starting endowment and no money is transferred between the first and second movers.

This result is obviously inefficient for the players.

Berg, Dickhaut, and McCabe were the first economists to evaluate the Trust Game empirically using student participants¹⁷. What they discovered significantly differs from the forecast made out of pure self-interest. First-movers typically send half of their endowment, which demonstrates a high level of "trust." 95 percent of what was sent by "first-movers" is often returned by "second-movers."

As a result, many second movers return the investments made by first movers. Numerous further research that conducted experimental analyses of the Trust Game supported this conclusion¹⁸.

Additional experimental games with structures similar to the Trust Game have also shown reciprocal behavior.

Second-movers, referred to as "workers," are paid a predetermined pay by first-movers, referred to as "firms." Once a second mover accepts the offer, they might invest considerable effort. The reward for moving first requires more work, but the reward for moving second requires less effort. The second mover gains social efficiency with every effort made. Once more, conventional rational choice theory would predict that first movers provide

¹⁷ Berg, J., Dickhaut, J., & McCabe, K. (1995). Trust, Reciprocity, and Social History. *Games and Economic Behavior*, 10(1), 122–142.

¹⁸ Camerer, C. F. (2003). *Behavioral Game Theory: Experiments in Strategic Interaction*.

the lowest salary since second movers make little effort in the absence of reputational consequences. It was out, nevertheless, that first movers often provided "generous" salaries, and second movers' effort increased generally in line with the proposed salary.

This offers more proof that many people reciprocate behavior.

The theory of pure self-interest is discredited by experimental evidence of reciprocal conduct. It inspired economists to develop models that are in line with the results of the experiments. Altruistic preferences, which take into account the payoffs of others as well as ones personal, are a clear contrast to pure self-interested preferences, which prioritize outcomes purely according to one's own payoffs. Such preferences, nevertheless, have been proven to be quite fragile. They struggle to explain "negative reciprocity," which refers to the tendency of many people to sacrifice their own interests in order to penalize others who act just in their own best interests. For instance, Fehr and Gächter demonstrate empirically that players penalize free riders in a game of public benefit, despite the fact that doing so costs them money and has no long-term benefits.

In response, theorists created the concept of "inequity-aversion" (Fehr/Schmidt 1999). Inequity-averse people attempt to maximize their own rewards and reduce the gap between their rewards and those of others. These two goals' relative importance is governed by a set of predetermined characteristics. It should be noted that inequity-averse people could be prepared to sacrifice their own payoffs in order to lessen the reward differential. Because of this, they demonstrate both positive and negative reciprocity.

Only the payoff distribution is used to rank the outcomes by altruistic and equity-averse preferences. However, there is strong evidence that people also consider the motivations of their opponents since they appear to want to reward "kind" behavior and penalize "unkind" behavior (Rabin 1993).

Players judge someone's generosity based on their apparent intents or dispositions rather than just how much they donate. As a result, judgments of the other players' benevolence frequently depend on the possibilities that could be open to them. For instance, in the Trust Game, if the first-endowment mover's is small, the second-mover won't perceive the first-

actions mover's as being harsh when the first-mover transfers a little sum of money. On the other hand, if the first mover has a large endowment but only sends a portion of it, the second mover could view this as rude. It is necessary to codify preferences in the area of material and psychological payoffs if one wants to examine strategic conduct in games where players are concerned with intents. The ideas about the actions of other agents lead to psychological benefits. Think about a second mover who thinks the first mover will share half of her endowment, for instance. The second mover can become upset if she receives less.

The money the second mover keeps for himself acts as the material payment, and his utility then consists of the psychological payoff (the feeling of disappointment).

In economics and game theory, psychological payoffs are rare, and there are almost infinitely many ways to characterize them. It is important to include perceived kindness into formal models and to explain the experimental results using psychological payoffs. Although extremely sophisticated, it might be challenging to apply theories with psychological payoffs to games with more complex structures than the Trust Game.

1.3.2 The Neo-Humean Model of Practical Reason

Many past and present authors have suggested that one of the fundamental sources of motivation is the desire to be respected by others. Ellingsen and Johannesson¹⁹ define social respect as the acceptance of one's own "type" by others. They build a model that includes two categories of agents: those who are generally altruistic and those who are generally self-interested. Although an agent's type is not transparent to others, agents can signal it by their behavior. For example, by acting in a reciprocal manner, they can show that they are the altruistic type and influence the other person's perception (Batson 1998). When the other agent assigns a higher probability to the chance that the other agent is altruistic, the utility of the person improves. Therefore, reciprocal behavior may boost the agent's reputation in society.

¹⁹ Ellingsen, T., & Johannesson, M. (2008). Pride and Prejudice: The Human Side of Incentive Theory. *American Economic Review*, 98(3), 990–1008.

The idea of "self-image" is connected to the idea of social respect. A lot of people want to keep their actions and values in alignment, according to psychologists and sociologists. This might affect how people behave. As an illustration, Batson writes: "Being able to reward oneself and feeling good about being a nice, caring person can be a great motivator to lend a hand"²⁰. Although agents are unsure of their genuine preferences, they can learn about them through the acts of the past. The agent can then use reciprocal behavior as evidence that he is a decent person.

As an alternative, people might also want to imitate other people's behavior. The interaction between a leader and a group of agents is modeled by Sliwka²¹. The first mover, the principal, has both trust and authority over the second movers, the agents.

The principal's best approach is to trust, provided that most other agents do the same. 'Conformists' refer to some agents. If they behave in the same way as the majority of agents, their utility is maximized. For conformists, the principal's trust in the agents can be a sign that the majority of the agents exhibit reciprocal behavior. Otherwise, the principal's confidence would not be worthwhile. Conformists then begin to return the principal's trust as a result of this.

Theories used to explain reciprocal conduct in trust games are typically based on a Neo-Humean Model of Practical Reason, which will now be demonstrated in this section (NHMPR). It begins by describing the NHMPR and its in-depth explanation of the relationship between motivation and reasons for action. The specific methods in which the previously described models subscribe to the NHMPR will then be demonstrated.

Hume's theory of motivation has a profound influence on the NHMPR. According to Hume's famous assertion, reason can never claim to be anything other than the passions' slave and must always submit to them²². Although reason helps in controlling an agent's behavior, it is in no way a source of motivation on its own. Finding correct assertions regarding

²⁰ Batson, C. D. (1998). Altruism and prosocial behavior. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (pp. 282–316). McGraw-Hill.

²¹ Sliwka, D. (2007). Trust as a Signal of a Social Norm and the Hidden Costs of Incentive Schemes. *American Economic Review*, 97(3), 999–1012.

²² Hume, D. (1970). *A Treatise of Human Nature*.

relationships between methods and ends is reason's full duty. A core element of the NHMPR is Hume's explanation of motivation, which holds that an action is never driven solely by reason but always has a desire at its root. This assumption and the motivational condition, which states that any consideration that claims to be a cause for action must be able to motivate the agent, lead to the conclusion that any reason for action must be motivated by a desire. The NHMPR states that motivations for action are at least founded on a desire or a belief about which actions lead to the fulfillment of particular goals. Furthermore, according to this desire-belief model of practical reason, taking a rational choice of action is equivalent to doing the course of action that best achieves the objectives of an agent, which are determined by his wishes. As a result, the NHMPR also meets the normative condition that the reasons for action justify the action. The reasons for action not only establish why an action was reasonable to pursue by identifying specific motives, or the motivating factors of the agent, but they also explain why an action was taken in the first place. Therefore, in the NHMPR, an action can be justified as rational from the owner's 1st perspective by proving that it was the best way for him to achieve his goals.

The discussion of internalism versus externalism starts from the issue of how to understand the phrase "having a reason to x" (an action)²³. According to internalism, if it is true that person P has a reason for doing something, then doing that thing will serve or further that motive. This means that person P cannot have a reason to do x if it lacks a motive like that. Contrarily, externalism contends that the assumption "a person has a reason to x" does not require that person P possess a motive that is served or enhanced by x-ing. Internalism regarding reasons is based on the notion that in order for reasons for actions to explain why a certain action is pursued, those reasons must also serve as a motivation for the agent to behave in that specific way. It is ensured that these reasons serve as a motivation for the

²³ Williams, B. (1981), Internal and External Reasons, in: *Moral Luck*, Cambridge, 101

agent since the NHMPR develops reasons for acts from the desires of the agents to who the reasons relate.

The externalism of reasons for action, in contrast, does not assume that if a person (P) has reasons for doing something (X), then P necessarily has a motivation for doing it (X). As a result, it is impossible to state that someone P x-ed because of reasons that person P had to x. Given that the "external" reasons that pertained to person P did not imply a motive to x, it is possible that person P did not have a motive to x. Therefore, it might be impossible to explain why person P did what they did because doing so would entail identifying the existence of a motive. Due to its absence of an explanation of the motivations behind action, many people reject externalism.

The following paragraphs demonstrate how both traditional and contemporary economic models of reciprocal behavior adhere to the NHMPR. These theories all agree that desires are the basis for motivation. The "altruistic preferences" and "inequity aversion" of some of the early economics models are used to explain the reciprocal conduct of some agents in the Trust Game. Here, reciprocal behavior serves as the ideal way for the agent to achieve specific goals, such as the desire for a more equitable payoff distribution or the preference for the greater payoff of another player.

Consequently, the "altruistic preference" and the "inequity aversion" models support the NHMPR because they assume that the agent's desire for a certain payoff distribution, combined with a particular means-ends view, will drive him to take a reciprocal action. The desire to reward nice behavior and penalize unkind behavior drives the behavior of the second movers, even in the intention-based model of reciprocity, where some second movers are stated to take into consideration the intentions of the first movers. As a result, this model also supports the NHMPR as an intention to encourage good actions and punish bad acts as well as a belief about the actions necessary to fulfill this desire and to support and defend reciprocal behaviour.

Recent models of reciprocal economic conduct also frequently accord to the NHMPR. In both of these scenarios, the desire to reciprocate finally drives the second mover. According to the social esteem paradigm, the agent

strives for social respect and hence reciprocates in an effort to win the respect of the first mover. As a result, the activity is motivated by a desire for social acceptance and the conviction that reciprocal behavior in the Trust Game promotes social acceptance. The "self-image" concept explains reciprocal conduct by emphasizing the desire to act in a way that is compatible with one's self-image in order to narrow the gap between one's ideals and actions.

This indicates that an agent's desire to conform to his own image of himself and her conviction that this behavior is an efficient way to achieve this goal lead to reciprocal action. As a result, the NHMPR also works here. Last but not least, Sliwka's method of explaining reciprocal conduct in the Trust Game also falls under the NHMPR: the agents, or second movers, behave reciprocally because of a desire to act in accordance with the majority of the second movers in the pool and a conviction that the principal, or first mover's trust indicates that the majority of second movers will reciprocate the trust.

1.3.3 The Kantian Model of Practical Reason

The alternative Kantian Model of Practical Reason (KMPR), which has not yet received adequate study in the theoretical discussion of the phenomenon of reciprocal behavior in Trust Games, might be contrasted with the NHMPR.

This section goes into greater detail on how experimental economists and other social scientists might incorporate the KMPR into their ideas after introducing it and explaining how it explains reciprocal behavior in Trust Games. The KMPR disagrees with the notion that motivations for action must originate from specific desires. The KMPR has an externalist perspective on reasons for action if they are not motivated by desires. According to the theory of externalism, justificatory explanations for behavior don't need to be connected to the agent's personal motivations (Williams 1981). It also confirms that the validity of normative arguments does not have to be able to affect the action of the agent to which they are applied.

This leads to the unique scenario where, as described above, an agent does a certain action for a set of normative reasons, but those reasons are inadequate to motivate the action and are therefore unable to justify the action. So it is difficult to see how an externalism about reasons could support a model of practical reason that accounts for both the normative and the descriptive aspects of practical reason. As a result, it is critical to recognize that the KMPR has conceptual space inside of an internalist explanation of reasons for action, defined as the argument that "having a reason to x" indicates that the individual has a purpose that is served or furthered by x-ing. The KMPR simply rejects that fulfilling or promoting a motive by x-ing implies that the motivation was formed by a desire. Indeed, the KMPR might suggest that reasons for action do not have to be motivated by a desire, even if they are.

Accordingly, the KMPR claims to meet the motivational condition, which states that reasons for action must be motivating. As a result, the key distinction between the NHMPR and the KMPR is not whether or not the reasons for action are to motivate an individual; both models may support this assertion. The distinction between these theories is found in how they react to the question of what constitutes the source of motivation²⁴. In contrast to the NHMPR, the KMPR advances the notion that while reasons might be the source of motivation for an action, an agent can always satisfy a desire while doing it.

Motivated desires are those that a person has after a period of consideration. These wants are not simply supplied to an agent in the sense that the agent sees certain desires to exist. Rather, these desires develop through a process of reasoning, the outcome of which is the presence of a specific desire, which motivates the agent to act in its pursue.

An agent, for example, may be driven to study for an exam because she believes it will improve her chances of passing. Unmotivated wants, on the other hand, are those that the agent just considers without further thought.

²⁴ Gosepath, S. (2002). Practical Reason: A Review of the Current Debate and Problems. *Philosophical Explorations*, 5(3), 229–238

The desire to drink water, for example, may just arise to an agent even if the agent did not consider if she was thirsty in the first place. More crucially, a motivated desire may, but does not have to be, driven by other kinds of desires. As a result, certain desires from the agent's subjective motivational set can produce additional desires that count as motivated desires through a solid deliberative path (Williams 1981).

However, it is a feature of the KMPR that not all motivated desires are reducible to other desires. Rather, certain desires are driven by reasons that are independent of any specific desire of the actor to whom the reasons apply.

The KMPR can explain reciprocal behavior differently from the NHMPR and therefore may serve as the foundation for further explanatory interpretations of laboratory data. The reciprocal conduct can be explained as follows. The second-mover behaves reciprocally because she believes she has motives that prohibit him from doing differently. After all, some second-movers may believe that in the Trust Game, returning the trust of the first-mover is a standard that no one could reasonably reject under such circumstances, and so represents a strong reason to behave properly. While a second mover who feels he has a responsibility to reciprocate may develop a desire to reciprocate, a theory that considers this desire to be essential would fail to identify the true source of the reciprocal action.

The explanation must begin with the secondmover's perception of the reasons as moral arguments that could not be rationally rejected and work its way up to the desire the agent developed in response to those arguments. The urge to reciprocate is a motivated want, to use Nagel's language, and it is not always reducible to other pre-existing desires in the subjective motivational set of the second-mover. As a result, the KMPR brings up a new line of reasoning for the previously understudied reciprocal behavior shown in the Trust Games.

Note how this explanation of the desire to reciprocate differs dramatically from how social norms are discussed in the economic literature. Social norms are accepted standards of conduct followed by all members of a certain social group. They efficiently manage social contact. Since there is no universal agreement on this conduct, mutual reciprocity in trust games

does not form a social norm. A variety of incentives are compatible with adhering to social norms, however the KMPR explanation has a very specific definition of the drive to act reciprocally. If one agrees that an agent can be motivated by reasons, then one is challenged to explain how such a position might be included into a theory of rational choice that assumes an actor's preferences to be provided. Economic theory frequently fails to explain why an actor has particular choices, or desires. It takes the motivations behind an agent's behavior for granted or ignores them in particular. Dietrich and List establish a reason-based explanation of preference creation that advances rational choice theory. Their concept suggests that an agent's choices for rewards or external conditions rely on his motivations. This suggests that an agent's preferences may alter as his motivations evolve. This opens up the prospect that actors have "the capacity to form, to revise and rationally to pursue a conception of one's rational advantage or good" to borrow Rawls' phrase²⁵.

Thus, a theory of rational choice based on reasons does a good job of explaining the KMPR's finding that certain players can be driven to act reciprocally for specific reasons. It stands as a serious challenge to the early and contemporary models of economists who all adhere to the NHMPR. The current method proposed by Dietrich and List has two appealing qualities²⁶.

First of all, even if these preferences vary throughout the agent's motivational states, the link between motivating factors and preferences is described in a way that enables a concise representation of these preferences. This representation enables economists to evaluate strategic engagement in economic games using traditional approaches.

Second, rather than analyzing the link between an agent's motivating factors and his actual preferences, the framework may also be used to examine the relationship between his normative reasons and the preferences he should have. This makes it possible to distinguish between a reason-based justification of choices and a reason-based explanation.

²⁵ Rawls, John. 1993. *Political Liberalism*. New York: Columbia University Press.

²⁶ Dietrich, F., & List, C. (2011). *A Reason-Based Theory of Rational Choice* *. *Noûs*, 47(1), 104–134.

Additionally, experimental economics can demonstrate that altering the motivating factors may cause changes in behavior. The recent work of Benjamin, Choi, and Fisher is a nice example²⁷.

By bringing these norms to the attention of a randomly chosen group of student participants, researchers examine the influence of religious norms on economic conduct. The term "priming" currently refers to this practice in psychological literature. According to the experimental findings, some primed people start to get motivated by religious norms. For example, they demonstrate that Protestants who have been primed make more contributions to the common good than their unprimed peers.

This shows not just that people's tastes are not constant, but also how their conduct shifts in response to driving factors. Therefore, it appears that a cause rather than a desire is what drives this conduct. The essay has so far argued that both old and new models that attempt to describe reciprocal behavior rely on the NHMPR. Additionally, it has been argued that taking into account the KMPR would provide for an appealing foundation for future efforts to explain the reciprocal conduct in Trust Games.

²⁷ Benjamin, D. J., Choi, J. J., & Fisher, G. (2016). Religious Identity and Economic Behavior. *Review of Economics and Statistics*, 98(4), 617–637.

CHAPTER 2

Determinants of trust and reciprocity: experimental evidence

2.1 Personal and social factors

Trust and reciprocity are key elements in social interactions and relationships. Trust refers to the belief in the reliability, integrity, and ability of another person or group, while reciprocity refers to the mutual exchange of benefits or privileges between individuals or groups.

There are several factors that can influence the development of trust and reciprocity, including:

- Past experiences: past interactions with an individual or group can shape an individual's perceptions of trust and reciprocity. If past experiences have been positive, an individual may be more likely to trust and reciprocate with that person or group in the future. Conversely, negative past experiences can lead to mistrust and a reluctance to reciprocate.
- Social norms: the cultural and societal norms within a group or community can influence the level of trust and reciprocity among its members. For example, in some cultures, there may be a strong emphasis on trust and reciprocity within the community, while in others, there may be less emphasis on these concepts.
- Group membership: individuals may have a greater level of trust and reciprocity with members of their own group or community. This is often referred to as "in-group bias" and can be influenced by factors such as shared values, shared experiences, and shared identity.
- Communication and transparency: clear and open communication can help build trust and reciprocity in a relationship or interaction. When individuals feel that they are being kept informed and included in decision-making, they are more likely to trust and reciprocate with others.

- Power and status: differences in power and status can impact the level of trust and reciprocity in a relationship or interaction. When one person holds more power or status, they may be less likely to trust and reciprocate with others.
- Self-interest: reciprocity may be driven by the expectation of mutual benefit. If individuals believe that they will benefit from a relationship, they may be more likely to trust and reciprocate with others.
- Fairness: individuals may be more likely to trust and reciprocate with those who are perceived as fair. When individuals believe that they are being treated fairly and that others are not taking advantage of them, they may be more likely to trust and reciprocate.
- Empathy: the ability to understand and share the feelings of others can influence trust and reciprocity. When individuals are able to understand and empathize with others, they may be more likely to trust and reciprocate with them.

It's important to note that these factors can interact and influence trust and reciprocity in complex ways, and the importance of each factor may vary depending on the specific context or relationship. Additionally, trust and reciprocity are not always positive, in some cases, distrust and lack of reciprocity can be detrimental for social interactions and relationships.

2.1.1 Past experience

Trust and past experience are closely linked, as past experiences can shape an individual's perceptions of trust and influence their willingness to trust others in the future. Past experiences can provide individuals with a sense of predictability and understanding of how others will behave, which can influence their level of trust.

When individuals have positive past experiences with another person or group, they may be more likely to trust them in the future. For example, if someone has had a positive experience with a co-worker in the past, they may be more likely to trust that co-worker in future projects. This is because past experiences can create a sense of familiarity and comfort, which can lead to a greater sense of trust. Similarly, if an individual has had a positive experience with a certain brand or product, they may be more likely to trust

and purchase that brand or product in the future. This is because past experiences can create a sense of reliability and consistency, which can lead to a greater sense of trust.

On the other hand, negative past experiences can lead to mistrust and a reluctance to trust others in the future. For example, if an individual has had a negative experience with a co-worker in the past, they may be less likely to trust that co-worker in future projects. This is because past experiences can create a sense of uncertainty and discomfort, which can lead to a lower sense of trust. Similarly, if an individual has had a negative experience with a certain brand or product, they may be less likely to trust and purchase that brand or product in the future. This is because past experiences can create a sense of unreliability and inconsistency, which can lead to a lower sense of trust ²⁸.

It's also worth noting that past experiences are not the only factors that influence trust, but they can be a strong influence, especially in cases where the experiences are significant or repeated.

Past experience can play a crucial role in determining the level of reciprocity in future interactions. Reciprocity is the practice of exchanging things with others for mutual benefit, such as favors, gifts, or services. It is based on the principle of mutual exchange, where individuals or groups reciprocate in kind to maintain social relationships, build trust and cooperation.

When a person has had positive past experiences with someone, they are more likely to engage in reciprocity in future interactions. For example, if a person has had a good experience with a friend, they are more likely to be willing to help them in the future, lend them money, or do a favor for them. Similarly, if a person has had positive past experiences with a business, they are more likely to be willing to return as a customer in the future, recommend it to others and leave a positive feedback. This is because positive past experiences create a sense of trust and mutual benefit that

²⁸ Goudge, J., & Gilson, L. (2005). How can trust be investigated? Drawing lessons from past experience. *Social Science & Medicine*, 61(7), 1439–1451.

encourages individuals to continue the relationship and engage in future exchange.

On the other hand, if a person has had negative past experiences with someone, they are less likely to engage in reciprocity in future interactions. For example, if a person has had a bad experience with a friend, they are less likely to be willing to help them in the future, lend them money, or do a favor for them. Similarly, if a person has had negative past experiences with a business, they are less likely to be willing to return as a customer in the future, recommend it to others or leave a positive feedback. This is because negative past experiences create a sense of distrust, dissatisfaction and mutual loss that discourage individuals to continue the relationship and engage in future exchange (Jane Goudge, Lucy Gilson, 2005).

Additionally, past experiences can shape a person's expectations of reciprocity in future interactions. For example, if a person has had negative past experiences with a particular type of person or organization, they may have lower expectations of reciprocity in future interactions with them. They may be less likely to initiate exchange or accept offers from that group, and more likely to be skeptical or cautious in their interactions. This can create a self-fulfilling prophecy where the lower expectations of reciprocity leads to less actual reciprocation, which in turn confirms the person's lower expectations.

In summary, past experience plays a crucial role in determining the level of reciprocity in future interactions. Positive past experiences tend to lead to more willingness to engage in reciprocity, while negative past experiences tend to lead to less willingness to engage in reciprocity. Additionally, past experiences can shape a person's expectations of reciprocity in future interactions and influence their behavior in those interactions.

2.1.2 Social norms

Social norms can play a significant role in shaping trust in social interactions. Social norms are informal rules that govern behavior in a group or society, and they can vary widely across different cultures and contexts. They are often unwritten and can be hard to identify explicitly, but they are important drivers of how people interact with each other.

Trust is defined as a belief in the reliability, truth, ability, or strength of someone or something. It is a belief that the other person or organization will act in a way that is consistent with one's own interests and goals. Trust is a fundamental aspect of social interactions, as it allows individuals to rely on others and engage in cooperation, exchange, and social relationships. Social norms can shape trust by influencing the expectations and behaviors of individuals in a group or society. For example, in a society with strong social norms around honesty and integrity, individuals may be more likely to trust others because they expect that others will act in an honest and trustworthy manner. People may be more likely to share personal information, lend money or resources, or entrust tasks to others because they believe that those who they interact with will act in an honest and trustworthy manner. In contrast, in a society with weak social norms around honesty and integrity, individuals may be less likely to trust others because they expect that others will act in a dishonest or untrustworthy manner. People may be less likely to share personal information, lend money or resources, or entrust tasks to others because they believe that those who they interact with will act in an dishonest or untrustworthy manner ²⁹. Social norms can also shape trust by influencing the behaviors of individuals in a group or society. For example, in a society with strong social norms around reciprocity, individuals may be more likely to trust others because they expect that others will reciprocate in kind when they engage in social exchange. People may be more likely to help others, give gifts, or offer favors because they believe that those who they interact with will reciprocate in kind. In contrast, in a society with weak social norms around reciprocity, individuals may be less likely to trust others because they expect that others will not reciprocate when they engage in social exchange. People may be less likely to help others, give gifts, or offer favors because they believe that those who they interact with will not reciprocate in kind. Moreover, social norms can also shape trust by influencing the way that individuals interpret and respond to the actions of others. For example, in a

²⁹ Burger, J. M., Sanchez, J., Imberi, J. E., & Grande, L. R. (2009). The norm of reciprocity as an internalized social norm: Returning favors even when no one finds out. *Social Influence*, 4(1), 11–17.

society with strong social norms around politeness and respect, individuals may be more likely to trust others when they receive a polite or respectful response from them. They may interpret politeness and respect as a sign of goodwill and trustworthiness. In contrast, in a society with weak social norms around politeness and respect, individuals may be less likely to trust others when they receive a polite or respectful response from them. They may interpret politeness and respect as insincere or manipulative, and not as a sign of goodwill and trustworthiness.

In conclusion, social norms play a significant role in shaping trust in social interactions. They can influence the expectations and behaviors of individuals in a group or society, and thus shape the level of trust that individuals have in others. Strong social norms around honesty, integrity, reciprocity, politeness and respect can lead to a higher level of trust, while weak social norms can lead to a lower level of trust. Social norms are not only a reflection of the state of trust in a society, but also a powerful tool to build and maintain trust.

Social norms can play a significant role in shaping reciprocity in social interactions. Social norms are informal rules that govern behavior in a group or society, and they can vary widely across different cultures and contexts. Reciprocity is the practice of exchanging things with others for mutual benefit, such as favors, gifts, or services. It is based on the principle of mutual exchange, where individuals or groups reciprocate in kind to maintain social relationships, build trust and cooperation. Social norms can shape reciprocity by influencing the expectations and behaviors of individuals in a group or society.

For example, in a society with strong social norms around reciprocity, individuals may be more likely to engage in reciprocity because they expect that others will reciprocate in kind when they engage in social exchange. People may be more likely to help others, give gifts, or offer favors because they believe that those who they interact with will reciprocate in kind (Jerry M. Burger, Jackeline Sanchez, Jenny E. Imberi, and Lucia R. Grande, 2009).

This can create a positive feedback loop where more reciprocity leads to more trust and cooperation, which in turn leads to more reciprocity.

On the other hand, in a society with weak social norms around reciprocity, individuals may be less likely to engage in reciprocity because they expect that others will not reciprocate when they engage in social exchange. People may be less likely to help others, give gifts, or offer favors because they believe that those who they interact with will not reciprocate in kind. This can create a negative feedback loop where less reciprocity leads to less trust and cooperation, which in turn leads to less reciprocity.

Additionally, social norms can also shape reciprocity by influencing the way that individuals interpret and respond to the actions of others. For example, in a society with strong social norms around gratitude and appreciation, individuals may be more likely to reciprocate when they receive a favor, gift or service because they feel grateful and appreciated. They may interpret gratitude and appreciation as a sign of respect and mutual benefit. In contrast, in a society with weak social norms around gratitude and appreciation, individuals may be less likely to reciprocate when they receive a favor, gift or service because they feel unappreciated or taken for granted. They may interpret gratitude and appreciation as insincere or manipulative, and not as a sign of respect and mutual benefit.

In conclusion, social norms play a significant role in shaping reciprocity in social interactions. They can influence the expectations and behaviors of individuals in a group or society, and thus shape the level of reciprocity that individuals engage in. Strong social norms around reciprocity, gratitude and appreciation can lead to more willingness to engage in reciprocity, while weak social norms can lead to less willingness to engage in reciprocity. Social norms are not only a reflection of the state of reciprocity in a society, but also a powerful tool to build and maintain reciprocity.

2.1.3 Group membership

Group membership can have a significant impact on trust within a group. Being a member of a group can create a sense of belonging and shared identity, which can lead to the development of trust among group members. When individuals feel like they are part of a community and share common goals and values, they are more likely to trust one another and work together cooperatively.

Additionally, group membership can provide opportunities for individuals to interact and develop relationships with one another. Through these interactions, group members can learn about one another's strengths, weaknesses, and values, which can build trust. Group activities, such as team-building exercises, can also help to foster trust among group members³⁰.

On the other hand, group membership can also create barriers to trust. In some cases, group membership can be based on characteristics such as race, gender, or socioeconomic status, which can lead to prejudice and discrimination. This can create mistrust among group members and create a more toxic group dynamic. Group membership can also create a sense of competition and rivalry among group members, which can lead to mistrust and conflicts.

Overall, group membership can have a positive or negative influence on trust within a group, depending on the dynamics and culture of the group. It is important for group leaders and members to actively work to foster a culture of trust and inclusivity within the group.

Group membership can influence reciprocity, which is the act of responding to a positive action with another positive action, in several ways:

Positive Impact:

- Group membership can create a sense of social identity and shared goals, which can lead to a stronger sense of reciprocity among group members.

When group members feel like they are part of a community and share

³⁰ Tanis, M., & Postmes, T. (2005). A social identity approach to trust: interpersonal perception, group membership and trusting behaviour. *European Journal of Social Psychology*, 35(3), 413–424.

common values, they are more likely to respond positively to one another's actions.

- Group membership can provide opportunities for individuals to interact and develop relationships with one another. Through these interactions, group members can learn about one another's strengths, weaknesses, and values, which can foster a sense of reciprocity.
- Group activities, such as team-building exercises, can also help to foster reciprocity among group members. These activities can create a sense of shared accomplishment and camaraderie, which can encourage group members to respond positively to one another's actions.

Negative Impact:

- Group membership can also create barriers to reciprocity. In some cases, group membership can be based on characteristics such as race, gender, or socioeconomic status, which can lead to prejudice and discrimination. This can create mistrust among group members and create a more toxic group dynamic, leading to less reciprocity.
 - Group membership can also create a sense of competition and rivalry among group members, which can lead to mistrust and conflicts. When group members feel that they are in competition with one another, they may be less likely to respond positively to one another's actions.
 - Group membership can also create power imbalances among group members. When some members have more power or influence than others, they may be less likely to respond positively to the actions of the other members, or to be responsive to them (Martin Tanis and Tom Postes, 2005).
- Overall, group membership can have both positive and negative influences on reciprocity within a group, depending on the dynamics and culture of the group. It is important for group leaders and members to actively work to foster a culture of reciprocity and mutual support within the group. This can be achieved by promoting open communication, shared decision-making, and a commitment to mutual respect and understanding among group members.

2.1.4 Communication and transparency

Communication and transparency are critical factors that can influence trust within a group or organization. Effective communication and transparency can help to build trust among group members by promoting mutual understanding, cooperation, and accountability.

Clear and open communication helps group members to understand one another's perspectives, goals, and intentions, which can build trust. When group members feel that they are being heard and understood, they are more likely to trust one another and work together cooperatively. Additionally, open communication can help to prevent misunderstandings and conflicts, which can erode trust.

Transparency is also important in building trust. When group members are aware of the decision-making process and the reasons behind decisions, they are more likely to trust the decisions and the group as a whole. When group members have access to accurate and timely information, they are better able to make informed decisions, which can promote trust.

On the other hand, a lack of communication and transparency can lead to mistrust among group members. When group members feel that they are being kept in the dark or that information is being withheld from them, they may become suspicious and untrusting. Similarly, a lack of transparency in decision-making can lead to confusion and frustration among group members, which can erode trust³¹.

Overall, effective communication and transparency are essential in building and maintaining trust within a group or organization. Group leaders and members should actively work to promote open communication and transparency in order to foster a culture of trust and cooperation.

Communication and transparency are critical factors that can influence reciprocity within a group or organization. Reciprocity refers to the act of responding to a positive action with another positive action.

³¹ Yue, C. A., Men, L. R., & Ferguson, M. A. (2019). Bridging transformational leadership, transparent communication, and employee openness to change: The mediating role of trust. *Public Relations Review*, 45(3), 101779.

Effective communication helps group members to understand one another's perspectives, goals, and intentions. When group members feel that they are being heard and understood, they are more likely to respond positively to one another's actions. Clear and open communication can also help to prevent misunderstandings and conflicts, which can erode reciprocity. Transparency is also important in promoting reciprocity. When group members are aware of the decision-making process and the reasons behind decisions, they are more likely to respond positively to the actions and decisions of the group. Transparency can also create a sense of accountability among group members and promotes trust in the group's decision-making process.

On the other hand, a lack of communication and transparency can lead to mistrust and negatively impact reciprocity among group members. When group members feel that they are being kept in the dark or that information is being withheld from them, they may become suspicious and less likely to respond positively to one another's actions. Similarly, a lack of transparency in decision-making can lead to confusion and frustration among group members, which can erode reciprocity (Cen April Yue, Linjuan Rita Men, Mary Ann Ferguson, 2019).

Overall, effective communication and transparency are essential in promoting reciprocity within a group or organization. Group leaders and members should actively work to promote open communication and transparency in order to foster a culture of mutual support and positive actions among group members.

2.1.5 Power and status

Power and status can have a significant impact on trust within a group or organization. Power refers to the ability to control or influence others, while status refers to an individual's social or professional standing within a group. When individuals hold more power or status within a group, they may be viewed as more trustworthy by other group members. This is because individuals with more power and status may have more resources and expertise to contribute to the group, which can create a sense of reliability and dependability. Additionally, individuals with more power and status

may be more likely to be held accountable for their actions, which can promote trust ³²

However, power and status can also create barriers to trust. When individuals hold too much power or status within a group, they may be seen as less trustworthy. This is because individuals with too much power or status may be more likely to abuse their power or to make decisions that benefit themselves rather than the group as a whole. Additionally, individuals with too much power or status may be less likely to be held accountable for their actions, which can erode trust.

Additionally, power imbalances within a group can lead to mistrust among group members. When some members have more power or influence than others, they may be less likely to trust the other members, or to be trusted by them. This can create a toxic group dynamic and can lead to conflicts and tension within the group.

Overall, power and status can have both positive and negative influences on trust within a group or organization. It is important for group leaders and members to actively work to promote a balance of power and status within the group, in order to foster a culture of trust and cooperation.

Power and status can have a significant impact on reciprocity within a group or organization. Reciprocity refers to the act of responding to a positive action with another positive action.

Individuals with more power or status within a group may be more likely to initiate positive actions, such as supporting and helping other group members. This can encourage other group members to reciprocate with positive actions of their own, leading to a more collaborative and supportive group dynamic. Additionally, individuals with more power or status may be more likely to be held accountable for their actions, which can promote reciprocity.

However, power and status can also create barriers to reciprocity. When individuals hold too much power or status within a group, they may be less

³² Ostrom, E., & Walker, J. J. (2003). Trust and reciprocity : interdisciplinary lessons from experimental research. *Russell Sage Foundation EBooks*.

likely to respond positively to the actions of others. This is because individuals with too much power or status may feel that their status or power gives them the right to act without considering the needs or wants of others³³. Additionally, individuals with too much power or status may be less likely to be held accountable for their actions, which can erode reciprocity.

Power imbalances within a group can also negatively impact reciprocity.

When some members have more power or influence than others, they may be less likely to respond positively to the actions of the other members, or to be responsive to them. This can create a toxic group dynamic and can lead to conflicts and tension within the group.

Overall, power and status can have both positive and negative influences on reciprocity within a group or organization. It is important for group leaders and members to actively work to promote a balance of power and status within the group, in order to foster a culture of mutual support and positive actions.

2.1.6 Self-interest

Self-interest can have both positive and negative influences on trust within a group or organization. Self-interest refers to an individual's own personal goals, needs, or desires, and it's a natural human tendency.

In some cases, self-interest can promote trust among group members. When individuals are able to balance their own self-interest with the interests of the group, they may be seen as more trustworthy. This is because individuals who are able to put the interests of the group above their own may be viewed as more reliable and dependable. Additionally, when group members have a clear understanding of one another's self-interests, they may be more likely to trust one another and work together cooperatively. This can lead to a more productive and successful group dynamic.

However, self-interest can also create barriers to trust. When individuals prioritize their own self-interest over the interests of the group, they may be

³³ Molm, L. D. (n.d.). POWER, TRUST, AND FAIRNESS: COMPARISONS OF NEGOTIATED AND RECIPROCAL EXCHANGE. *Power and Status*, 31–65.

viewed as less trustworthy. This is because individuals who prioritize their own self-interest may be more likely to make decisions that benefit themselves rather than the group as a whole. This can lead to group members feeling that the decisions are not fair, or that the group is not working for the common good, which can erode trust. Additionally, when group members are not transparent about their self-interests, it can create mistrust and confusion among group members .

Self-interest can also create power imbalances within a group, which can negatively impact trust. When some members have more power or influence than others, they may be more likely to prioritize their own self-interests over the interests of the group. This can create a toxic group dynamic and can lead to conflicts and tension within the group. This can make it difficult for group members to trust one another and work together effectively ³⁴.

Overall, self-interest can have both positive and negative influences on trust within a group or organization. It is important for group leaders and members to actively work to balance their own self-interests with the interests of the group, in order to foster a culture of trust and cooperation. This can be achieved by promoting open communication, shared decision-making, and a commitment to mutual respect and understanding among group members. Additionally, it is essential for group members to be transparent about their self-interests and to work together to find mutually beneficial solutions, to ensure that the group is working towards a common goal, with the interests of the group at heart.

Self-interest can have both positive and negative influences on reciprocity within a group or organization. Reciprocity refers to the act of responding to a positive action with another positive action.

In some cases, self-interest can promote reciprocity among group members. When individuals are able to balance their own self-interest with the interests of the group, they may be more likely to initiate positive actions, such as supporting and helping other group members. This can encourage

³⁴ Halali, E., Bereby-Meyer, Y., & Meiran, N. (2014). Between self-interest and reciprocity: The social bright side of self-control failure. *Journal of Experimental Psychology: General*, 143(2), 745–754.

other group members to reciprocate with positive actions of their own, leading to a more collaborative and supportive group dynamic. Additionally, when group members have a clear understanding of one another's self-interests, they may be more likely to trust one another and work together cooperatively, which can foster reciprocity. However, self-interest can also create barriers to reciprocity. When individuals prioritize their own self-interest over the interests of the group, they may be less likely to respond positively to the actions of others. This is because individuals who prioritize their own self-interest may feel that their own goals or needs are more important than those of the group. Additionally, when group members are not transparent about their self-interests, it can create mistrust and confusion among group members, which can erode reciprocity (Eliran Halali, Yoella Bereby-Meyer, and Nachshon Meiran, 2014).

Self-interest can also create power imbalances within a group, which can negatively impact reciprocity. When some members have more power or influence than others, they may be more likely to prioritize their own self-interests over the interests of the group. This can create a toxic group dynamic and can lead to conflicts and tension within the group, which can make it difficult for group members to respond positively to one another's actions (Ostrom, Elinor, and James Walker, 2003).

Overall, self-interest can have both positive and negative influences on reciprocity within a group or organization. It is important for group leaders and members to actively work to balance their own self-interests with the interests of the group.

2.1.7 Fairness

Fairness is a fundamental aspect of human relationships and is closely linked to trust. When people feel that they are being treated fairly, they are more likely to trust the person or organization making decisions. This is because fairness is often seen as an indicator of good intentions and a willingness to be transparent and accountable. On the other hand, when individuals feel that they are being treated unfairly, they are less likely to trust the decision

maker. This can be due to feelings of resentment or mistrust towards the decision maker, which can lead to a lack of cooperation and participation. Perceptions of fairness can also impact trust in a system as a whole. When a system is perceived as fair, individuals are more likely to trust and have confidence in it. This is because a fair system is seen as being trustworthy and unbiased, which can lead to a sense of security and stability. On the other hand, an unfair system may lead to distrust and a lack of confidence (Ostrom, Elinor, and James Walker, 2003). This is because an unfair system can be seen as biased or corrupt, which can lead to feelings of insecurity and instability.

Additionally, fairness can also influence trust by affecting the way people interact with each other. When people feel that they are being treated fairly, they are more likely to be cooperative and to engage in positive behaviors. This can lead to a sense of community and trust among individuals. On the other hand, when people feel that they are being treated unfairly, they may be less likely to cooperate and engage in positive behaviors. This can lead to a breakdown in trust and a lack of cooperation among individuals.

In conclusion, fairness plays a crucial role in shaping trust in various contexts, be it in relationships, decision-making, or systems. People tend to trust those who they perceive as fair and unbiased, and distrust those who they perceive as unfair or biased. When fairness is present, trust tends to be high, cooperation is likely and positive behaviors tend to be exhibited. When fairness is absent, trust tends to be low, cooperation is unlikely and negative behaviors tend to be exhibited.

Fairness and reciprocity are closely linked concepts, as perceptions of fairness can greatly influence how individuals respond in a reciprocal manner. Reciprocity refers to the act of responding to a positive action with another positive action, and it is a fundamental aspect of many social interactions.

When individuals perceive that they are being treated fairly, they are more likely to respond in a reciprocal manner. This is because fairness is often seen as an indicator of good intentions and a willingness to engage in

positive interactions. In this sense, fairness can act as a catalyst for reciprocity, as individuals who feel that they are being treated fairly are more likely to respond positively and to engage in cooperative behaviors ³⁵. On the other hand, when individuals perceive that they are being treated unfairly, they are less likely to respond in a reciprocal manner. This can be due to feelings of resentment or mistrust towards the other party, which can lead to a lack of cooperation and participation. In this sense, perceptions of unfairness can act as a barrier to reciprocity, as individuals may be less likely to engage in positive interactions or to respond positively to the actions of others.

It's also important to note that perceptions of fairness can be influenced by power dynamics and social hierarchies, just like trust. Those who hold more power and privilege may have more influence over what is considered fair and may be more likely to have their interests protected. This can lead to a lack of reciprocity among marginalized groups, who may feel that their interests are not being taken into account.

In conclusion, fairness plays a crucial role in shaping reciprocity by influencing how individuals respond to positive actions of others. When people perceive that they are being treated fairly, they are more likely to respond positively and to engage in cooperative behaviors, reciprocating the positive action. On the other hand, when people perceive that they are being treated unfairly, they are less likely to respond positively and to engage in cooperative behaviors, breaking the reciprocity. Also, the perception of fairness can be influenced by power dynamics and social hierarchies, which may affect reciprocity among marginalized groups.

2.1.8 Empathy

Empathy is not just about understanding the feelings of others, but also about the ability to put oneself in someone else's shoes and to respond appropriately. Empathy is a key component in building trust because it

³⁵ Fehr, E., & Gächter, S. (2000). Fairness and Retaliation: The Economics of Reciprocity. *Journal of Economic Perspectives*, 14(3), 159–182.

allows individuals to connect with others on an emotional level and to feel that they are being understood and respected. When people feel that they are being empathized with, they are more likely to open up and share their thoughts and feelings, leading to deeper and more meaningful interactions. This can lead to a greater sense of trust and a willingness to collaborate and cooperate with others.

Moreover, empathy can also play a critical role in conflict resolution and in the rebuilding of trust after a breach. When people feel that they are being understood and respected, they are more likely to be open to compromise and to find common ground. This can be especially important in situations where trust has been broken, as it allows individuals to understand and acknowledge the feelings and perspectives of others, and to work towards a resolution that is fair and acceptable to all parties involved ³⁶

Additionally, empathy can also influence trust by creating a sense of social identity and shared values. When people feel that they are part of a group or community that is empathetic and understanding, they are more likely to trust and have confidence in it. This can lead to a sense of belonging and shared purpose, which can foster cooperation and collaboration among group members.

It's important to note that empathy is not always easy to achieve, and it can be influenced by factors such as individual differences in empathy, cultural background and personal experiences. Additionally, empathy can also be influenced by power dynamics and social hierarchies, which can affect the ability of individuals to empathize with others who may have different perspectives or experiences.

In conclusion, empathy plays a crucial role in building trust by allowing individuals to understand and share the feelings of others. Empathy allows people to connect with others on an emotional level, to feel understood and respected, to collaborate, compromise and to find common ground (Ostrom, Elinor, and James Walker, 2003). Additionally, empathy can also create a sense of social identity and shared values. However, empathy is not always

³⁶ Pelligra, V. (2011). Empathy, guilt-aversion, and patterns of reciprocity. *Journal of Neuroscience, Psychology, and Economics*, 4(3), 161–173.

easy to achieve and it can be influenced by factors such as individual differences, cultural background and personal experiences. Furthermore, empathy can also be influenced by power dynamics and social hierarchies which can affect the ability of individuals to empathize with others who may have different perspectives or experiences.

Empathy and reciprocity are closely linked concepts, as empathy can greatly influence how individuals respond in a reciprocal manner.

When individuals are empathetic towards others, they are more likely to respond in a reciprocal manner. This is because empathy allows individuals to understand and share the feelings of others, which can lead to a greater sense of connection and understanding. When people feel that they are being understood and respected, they are more likely to respond positively and to engage in cooperative behaviors, reciprocating the positive action.

Additionally, empathy can also lead to a greater sense of compassion, which can motivate individuals to take positive actions towards others, and in turn, this can lead to reciprocity.

On the other hand, when individuals are not empathetic towards others, they are less likely to respond in a reciprocal manner. This can be due to feelings of disconnection or lack of understanding towards the other party, which can lead to a lack of cooperation and participation. Additionally, lack of empathy can lead to feeling of disconnection and isolation, which in turn can lead to less likelihood of reciprocity.

Empathy can also influence reciprocity by affecting the way people interact with each other. When people feel that they are being treated empathetically, they are more likely to be cooperative and to engage in positive behaviors, leading to a sense of community and trust among individuals. On the other hand, when people feel that they are not being treated empathetically, they may be less likely to cooperate and engage in positive behaviors, leading to a breakdown in trust and a lack of cooperation among individuals (Vittorio Pelligra, 2011).

In conclusion, empathy plays a crucial role in shaping reciprocity by influencing how individuals respond to positive actions of others. When people empathize with others, they are more likely to respond positively and

to engage in cooperative behaviors, reciprocating the positive action. On the other hand, when people lack empathy, they are less likely to respond positively and to engage in cooperative behaviors, breaking the reciprocity. Additionally, empathy can also influence the way people interact with each other, and it can play a major role in building trust and a sense of community among individuals.

2.1.9 Level of risk

Risk can have a significant influence on trust and reciprocity in several ways.

First, high levels of risk can undermine trust. For example, if someone consistently fails to follow through on promises or commitments, it can erode trust and make it difficult for them to establish and maintain relationships with others. In a business context, a company that has a history of unethical behavior or financial mismanagement will struggle to earn the trust of its stakeholders.

Second, risk can also impact trust through its influence on reciprocity, or the mutual exchange of goods, services, or favors. If one party perceives that the risk of being taken advantage of is high, they may be less likely to engage in reciprocal behavior. This can lead to a breakdown in trust and cooperation, as each party becomes more focused on self-preservation and less focused on the relationship as a whole.

On the other hand, low levels of risk can foster trust and reciprocity. For example, if someone consistently follows through on their commitments and acts in a trustworthy manner, they are more likely to earn the trust of others and to receive reciprocal behavior in return. In a business context, a company that operates transparently, ethically, and with a focus on customer satisfaction is more likely to build strong relationships with its stakeholders and earn their trust.

In conclusion, risk can have a significant impact on trust and reciprocity, both positively and negatively. When risk is perceived as high, it can undermine trust and discourage reciprocal behavior, but when risk is low, it can foster trust and support reciprocal behavior. Effective risk management can help to lower risk and build trust, leading to stronger relationships and more successful outcomes³⁷.

Additionally, the perception of risk can be just as important as actual risk in influencing trust and reciprocity. For example, if someone perceives a high level of risk in a situation, even if the actual risk is low, they may still be less likely to engage in reciprocal behavior or to trust others. Perception of risk can be influenced by various factors such as past experiences, cultural or societal norms, or the type of relationship being considered.

Moreover, the level of risk tolerance can also impact trust and reciprocity. People who have a high tolerance for risk may be more likely to engage in reciprocal behavior and build trust, as they are less concerned about the potential for loss or harm. On the other hand, those who have a low tolerance for risk may be more cautious and less likely to engage in reciprocal behavior, as they are more concerned about potential risks.

In business, trust and reciprocity are critical for building strong relationships with stakeholders and for success in a competitive marketplace. Companies that establish a reputation for trustworthiness, reliability, and ethical behavior are more likely to earn the trust of their customers, suppliers, and other stakeholders. This can lead to increased cooperation, more favorable terms and conditions, and ultimately, better outcomes for the company and its stakeholders.

In conclusion, risk has a complex and multifaceted influence on trust and reciprocity. The actual level of risk, the perception of risk, and individual risk tolerance can all impact trust and reciprocity, either positively or negatively. Companies and individuals who effectively manage risk and establish a reputation for trustworthiness are more likely to build strong relationships, foster reciprocity, and achieve their goals.

³⁷ Jøsang, A., & Presti, S. L. (2004b). Analysing the Relationship between Risk and Trust. *Lecture Notes in Computer Science*, 135–145.

2.2 Gender factor

Gender can have a significant impact on trust and trust-related behaviors. Studies have found that men and women tend to differ in their trust patterns, and that these differences can be observed across a variety of contexts, such as in personal relationships, business settings, and other social interactions. Research has shown that men tend to be more trusting of other men than of women. This gender-based trust bias, also known as the "male trust advantage," has been observed in a variety of settings, including in business, politics, and even in online interactions. This bias is thought to stem from socialization, as men are often taught to trust and rely on other men, while women are taught to be more cautious and to trust less.

Women, on the other hand, tend to be more trusting of both men and women. Studies have found that women tend to be more trusting of their partners, friends, and family members, regardless of their gender. Additionally, research has shown that women tend to be more trusting in general, and that they are more likely to trust people in a variety of different contexts.

It's important to note that these generalizations are not true for all individuals and that trust can be influenced by a variety of other factors such as personality, life experiences, and cultural background. For example, research has shown that women may be more likely to trust people in certain types of relationships or situations, such as family or close friends, while men may be more likely to trust people in other types of situations, such as business or professional relationships.

Moreover, research has shown that trust is also influenced by power dynamics, where individuals in positions of power tend to be more trusting and those in less powerful positions tend to trust less. This could also explain why women, in general, tend to trust less than men, as they are often in less powerful positions in society.

In conclusion, gender can have a significant impact on trust and trust-related behaviors, with men tending to be more trusting of other men and women being more trusting of both men and women. However, these generalizations

should be taken with a grain of salt, as trust is a complex phenomenon that can be influenced by a wide range of factors, including context, culture, and individual differences.

2.2.1 “Gender, trust and risk-taking: a literature review and proposed research model”

Studies on the relationship between gender and entrepreneurship have produced mixed results. Some studies suggest significant differences between men and women in entrepreneurial activity, while others find no significant differences. One major reason for the gender gap in entrepreneurship is not related to differences in cognitive abilities, but rather the propensity for risk-taking, which may be the result of differences in trust between the genders.

The literature review in the paper focuses on the relationships between trust, risk-taking and women entrepreneurship. The author develops a hypothetical model to shed light on these relationships and discusses how it can be used for further research.

Studies have commonly included personal characteristics such as creativity, leadership, risk-taking, and growth orientation as potential indicators of interest and ability to pursue entrepreneurial opportunities. Some studies point to significant gender differences in these areas, while others find no differences. Some studies have found that women exhibit lower levels of optimism and self-confidence, which affects their likelihood to engage in entrepreneurship. Other studies, however, have found no gender differences in entrepreneurial intentions.

Research has also shown that there are significant differences in the rate of new business creation between men and women worldwide. Some studies have found that women tend to have lower entrepreneurial intentions than men, while others have found no significant difference. A study of students found significant differences between male and female students on entrepreneurial intention, but this difference was not consistent across cultures.

The author stresses the need for further research to examine the relationships between trust, risk-taking, and women entrepreneurship. The model developed in the paper can be used as a basis for further research to better understand the impact of these factors on women entrepreneurship.

Gender differences in relation to risk-taking have been widely studied in the fields of psychology, sociology, and management. The results of these studies have consistently shown that women tend to be less likely to take risks compared to men. Meta-analyses of studies comparing risk-taking tendencies of male and female participants have shown that risk-taking is significantly greater among males³⁸. Studies have also shown that women tend to weight risk attributes such as the possibility of loss more heavily and emphasize risk reduction more than men³⁹.

Despite the evidence of women being more risk-averse, the reasons for these disparities are not entirely clear. Some studies suggest that personality, rather than gender, is a stronger explanatory factor of differences in risk-taking⁴⁰. A study of gender and entrepreneurial intention in the Middle East found that the only area where men and women differed in their entrepreneurial intentions was in their predisposition to risk-taking, with women being far less disposed to taking risks⁴¹. Other studies have found that women are less trusting of online purchasing, perceiving a higher level of risk, and that recommendations by friends can reduce the perceived risk and increase willingness to buy⁴².

It appears that gender gaps in risk-taking cannot be explained by differences in cognition. Instead, women tend to exhibit a lesser propensity to trust and to be more cautious in evaluating their targets and actions thoroughly. The likelihood of women being more cautious and evaluating their targets and

³⁸ Byrnes, J.P., Miller, D.C. and Schafer, W.D. (1999), "Gender differences in risk-taking: a meta-analysis", *Psychological Bulletin*, Vol. 125 No. 3, pp. 367-383.

³⁹ Olsen, R.A. and Cox, C.M. (2001), "The influence of gender on the perception and response to investment risk: the case of professional investors", *Journal of Psychology and Financial Markets*, Vol. 2 No. 1, pp. 29-36.

⁴⁰ Zuckerman, M. and Kuhlman, D.M. (2000), "Personality and risk-taking: common biosocial factors", *Journal of Personality*, Vol. 68 No. 6, pp. 999-1029.

⁴¹ Zeffane, R.M. (2010), "Towards a two-factor theory of interpersonal trust: a focus on trust in leadership", *International Journal of Commerce and Management*, Vol. 20 No. 3, pp. 213-224.

⁴² Garbarino, E. and Strahilevitz, M. (2004), "Gender differences in the perceived risk of buying online and the effects of receiving a site recommendation", *Journal of Business Research*, Vol. 57 No. 7, pp. 768-775.

actions more thoroughly may provide a better explanation for the observed disparities in risk-taking.

The existence of gender differences in trust behavior has important implications for economic behavior, including entrepreneurship. Studies on gender differences in trust behavior have produced mixed results, with some studies showing that females are less trusting than males, while others show the opposite or no difference.

The relationships between gender and trust are complex and may not be solely based on trust. It is probably the result of a combined effect of trust and risk-taking. Trust and risk-taking are closely related and can shape individual decisions to take risks and participate in business exchange activities, including entrepreneurship. Trust can affect an individual's willingness to take risks, and their propensity to trust can shape their attitudes and preferences toward given outcomes.

The research evidence suggests that the relationship between gender and trust is not one-sided and that it is influenced by multiple factors, including risk-taking.

In conclusion, the author proposes a new model that incorporates trust as a crucial factor in examining gender differences in entrepreneurial intentions and activities. The author argues that previous models and studies have been limited in their understanding of the relationship between gender, risk-taking and entrepreneurship, and that trust needs to be considered as an integral part of the equation. The author suggests that future research should explore the independent effects of trust and risk-taking, as well as their combined effects, on entrepreneurial intentions and activities. To accurately depict gender differences, future research should consider different types of trust and different types of risks, and should be conducted using both experimental (or laboratory) studies and survey research. The research should also consider participants from different socio-cultural backgrounds and contexts, and should include both current and potential entrepreneurs in different business sectors. This model can be used as a preliminary basis for extracting relevant theoretical foundations and hypotheses, and as a general

framework for future research in the field of gender and entrepreneurship. Governments and other stakeholders invested in promoting female entrepreneurship can also use this model to consider the factors of risk-taking/aversion and trust in their efforts to encourage female participation in entrepreneurial activities.

CHAPTER 3

Experiment analysis

3.1 Introduction

Trust and reciprocity play crucial roles in economic decision-making, as they are key components of social capital. They are particularly relevant when agents have limited information or when contracts are difficult to enforce, which is common in markets, institutions, and politics. Increased trust among people has been positively linked to growth across countries, improved organizational efficiency, and increased bilateral trade between countries. Financial markets also benefit from higher levels of trust, as individuals with higher trust levels are more likely to purchase stocks. Trustworthy individuals are also more productive and are more likely to repay their loans.

Experiments in economics have shown that individual behavior is motivated not only by trust, but also by reciprocity. Positive reciprocity has been observed in trust and gift exchange games, and reciprocity has been found to drive conditional cooperation and wage rigidity. Negative reciprocity, on the other hand, motivates people to punish unfair behavior, even at a cost to themselves. For example, in a labour market gift exchange game, the study by Gächter⁴³ showed that social comparison, or information about others' performance and earnings, impacts reciprocal behavior. The weakest reciprocity towards employers occurs when lazy co-workers are generously compensated.

People who interact in situations where trust and reciprocity are important are not homogeneous and may differ in personal factors such as gender and age. These factors have a significant impact on human behavior, and numerous experimental studies have reported systematic gender differences in trust and reciprocity. Most studies have found that men tend to trust more, while women tend to be more reciprocal. These gender differences can have

⁴³ Gächter, S., Nosenzo, D., Renner, E., & Sefton, M. (2009). Who Makes A Good Leader? Cooperativeness, Optimism And Leading-By-Example. *Research Papers in Economics*

significant implications for charitable giving, bargaining situations in the labor market, and household decisions. For example, lower trust in women may result in lower willingness to take a chance on a new employer or business partner, or in different wage bargaining behavior.

However, the participants in experiments examining gender differences in trust and reciprocity are usually college or university students. As a result, these laboratory experiments may not be representative of the general population, as they typically involve homogeneous subject pools. This article addresses this issue by examining gender differences in trust and reciprocity among a large and heterogeneous sample of the German population. The data were collected from an online experimental trust game that involved over 1000 participants who were representative of the German population in terms of gender, age, and residential region. The study controlled for various socio-demographic factors, such as income and age-gender interaction, which may affect participants' behavior in the experiment. This is the first study to investigate trust and reciprocity in a large, representative sample of the German population using an anonymous online experiment.

I have been studying the behavioral differences between men and women on different papers. Through various experiments conducted in the laboratory, I have gained a deeper understanding of the subject. However, these insights are often limited as the experiments are conducted with a small, homogeneous sample of participants. This leads me to question the reliability and generalizability of these findings.

Since we have understood that women are more risk-averse than men and that trusting a stranger is a risk, I want to know whether a heterogeneous experiment confirms this hypothesis or not.

3.2 Literature

Studies on the gender differences in trust and reciprocity often use the investment game as a framework. In this game, the first player, known as the proposer, allocates an amount of their endowment to the second player, referred to as the responder. The amount given is multiplied by a factor (usually 3) and then transferred to the responder, who can choose to return any portion of the amount back to the proposer. The amount sent by the proposer is seen as a measure of their trust in the responder, while the amount returned is seen as an indicator of the responder's reciprocity or trustworthiness. If the proposer believes the responder is motivated by positive reciprocity, it may be advantageous for the proposer to trust the responder by sending some or all of their endowment.

Croson and Gneezy⁴⁴ reviewed the literature and found that some studies suggest men tend to trust more than women, as they send more money when in the role of the proposer. On the other hand, other studies found no gender differences in trust behavior⁴⁵. The mixed results, according to Croson and Gneezy (2009), could be due to women being more context-sensitive in these experiments. With regards to the role of the responder, some studies found no gender differences⁴⁶, while others found that women tend to be more reciprocal than men (Croson and Buchan, 1999).

Croson and Gneezy (2009) conclude that, overall, women tend to be more reciprocal than men.

This is why I decided to take a closer look at the existing studies that have attempted to validate these laboratory findings by testing gender differences in trust and reciprocity among a more diverse group of subjects.

My research aims to fill the gap in the literature by exploring both gender differences in trust and reciprocity and the validity of experiments with homogeneous subjects. That is why I decided to analyse one of the blind

⁴⁴ Croson, R., & Gneezy, U. (2009). Gender Differences in Preferences. *Journal of Economic Literature*, 47(2), 448–474

⁴⁵ Croson, R., & Buchan, N. R. (1999). Gender and Culture: International Experimental Evidence from Trust Games. *The American Economic Review*, 89(2), 386–391.

⁴⁶ Chaudhuri, A., & Gangadharan, L. (2002). Gender Differences in Trust and Reciprocity. *Research Papers in Economics*.

trust game experiment made on a large number of people that focusing on the gender influence. I choosed a blind trust game to highlight the risk factor in order to study the link between risk and women.

3.3 Experiment design

The experiment was designed to be a variation of the investment game and participants were selected from a pool of online panel members residing in Germany. A total of 1004 subjects took part, consisting of 501 females and 503 males.

To ensure that the data collected was representative of the German population, the sample was chosen based on certain criteria, including age, gender, religious affiliation, and residential region. Participants were invited to participate in the experiment via email and directed to the Web-based experiment through a personalized link.

Each participant was required to play the trust game in two different roles - as the proposer and then as the responder. As the proposer, the subject was given an initial endowment of 100 €-cent and was instructed to send a portion, in increments of 10 €-cent, to the responder, with the understanding that the amount would be tripled by the experimenter. The responder was then given the opportunity to decide whether to return any portion of the tripled amount.

To examine the behavior of the responder, a strategy method was used, where the responder made conditional decisions about returning a certain amount, in increments of 10 €-cent, for each possible amount received between 30 and 300 €-cent. The experiment was designed to be anonymous, with participants not knowing the identity of their counterparts, which added an extra layer of complexity to the experiment.

Participants were incentivized to take part in the experiment through payment based on their decisions and those of their randomly matched partners. They were paid for both roles - as the proposer and as the responder.

In the role of the proposer, subjects received 100 €-cent minus the amount sent, plus the amount returned by a randomly matched responder according to the responder's decision in the strategy method. In the role of the responder, subjects received three times the amount sent by a randomly matched proposer minus the amount returned.

In addition to the experimental game, a short questionnaire was administered to participants to gather information about their socio-demographic characteristics, such as gender, age, income, residential region, and religious affiliation. The results of the questionnaire are summarized and provide valuable insight into the backgrounds of the participants.

		Women	Men	Total
Participants		501	503	1004
Residential	West Germany	360 (71.9%)	379 (75.3%)	739 (73.5%)
Region	East Germany	103 (20.6%)	83 (16.5%)	186 (18.5%)
	Berlin	38 (7.6%)	41 (8.2%)	79 (7.9%)
Age	18–24 years	77 (15.4%)	51 (10.1%)	128 (12.7%)
	25–49 years	285 (56.9%)	294 (58.5%)	579 (57.7%)
	50–66 years	139 (27.7%)	158 (31.4%)	297 (29.6%)
	Mean	40.57	42.32	41.45
	SD	12.71	12.50	12.63
Monthly income	Mean	2391.61	2854.91	2633.05

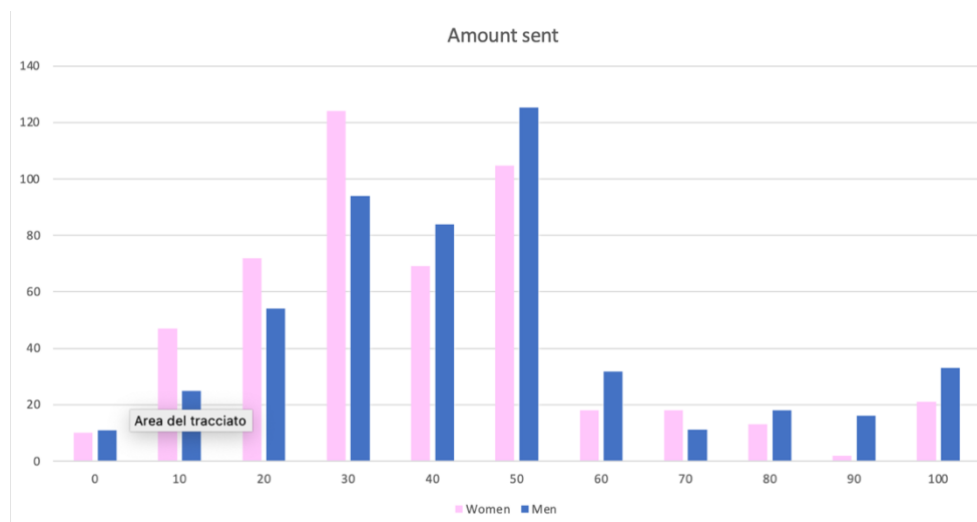
In conclusion, the online experiment conducted provides a comprehensive analysis of data obtained from a representative sample of the German population. The experiment provides valuable insights into the behavior of individuals in the roles of proposer and responder in a trust game, and the results obtained can be used to further understand human behavior in similar scenarios.

3.3 Experimental Results

3.3.1 Gender differences in trust

In this section, I examine the results of the experimental trust game. First, I investigate the gender differences in the amount of money sent by the proposer, which represents differences in trust. Next, I look into gender disparities in the amount returned by the responder, indicating variations in reciprocity.

The figure below displays the distribution of amounts sent by women and men in their role as proposers. Both distributions show a left-skewed pattern. The most frequently sent amounts were 30 cents, sent by 24,8% of women and 18.7% of men, and 50 cents, sent by 20.9% of women and 24.9% of men.



After conducting a chi-square test, I found that both distributions were not identical ($p < 0.01$). The average amount sent by women was 38.51 cents, while the average amount sent by men was 44.99 cents. A T-test indicated that the gender difference was statistically significant ($p < 0.01$), suggesting that, on average, men trust more than women.

Women			Men		
Amount sent	N	%	Amount sent	N	%
0	10	2,0%	0	11	2,2%
10	47	9,4%	10	25	5,0%
20	72	14,4%	20	54	10,7%
30	124	24,8%	30	94	18,7%
40	69	13,8%	40	84	16,7%
50	105	20,9%	50	125	24,9%
60	18	3,6%	60	32	6,3%
70	18	3,6%	70	11	2,2%
80	13	2,6%	80	18	3,6%
90	2	0,4%	90	16	3,2%
100	21	4,2%	100	33	6,6%
Mean		38,51 €		503	44,99 €

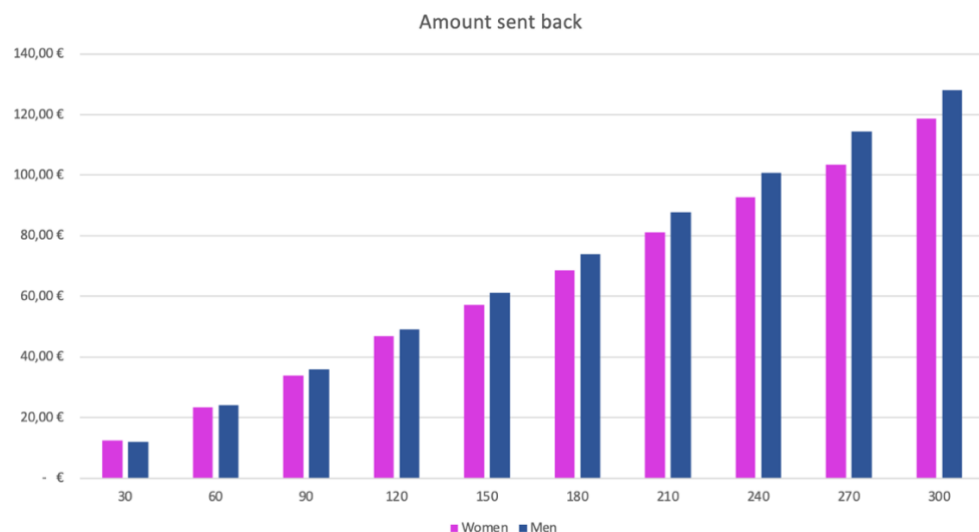
I employ Tobit regressions, which are restricted by the minimum (0) and maximum (100) amounts that can be sent by a subject, to determine the effect of gender on trust. My first model focuses on the amount sent by the proposer (SentTotal) as the dependent variable, with the independent variables being a gender dummy (Male= 1 if the proposer is male) and the proposer's age (Age) as a continuous variable. Results from the model indicate that men tend to exhibit more trusting behavior as they, on average, send 17.5% (6,74/38,51) more than women.

Tobit regression			
Variable	SentTotal	SentWomen	SentMen
Constant	27,97	41,532	19,282
Male	6,735		
Age	0,572	-0,116	1,331
Observations	1004	501	503
Left-censored	21	10	11
Uncensored	929	470	459
Right-censored	54	21	33

Because Age is close to being significant ($p < 0.1$) in the first model, I investigate potential age effects by estimating separate models for men and women. The dependent variables in these models are the amounts sent by men (SentMen) and women (SentWomen). Results show an inverse U-shaped age effect for men, with older men sending higher amounts up until the age of 43, after which they send less. For women, however, I do not observe a linear or inverse U-shaped age effect.

3.3.2 Gender differences in reciprocity

The strategy method is employed to elicit the responders' behavior. Each participant indicates the amount they are willing to return based on a given hypothetical amount received. There are the amounts returned by gender, with women returning an average of 63.82€-cent (38.7%) and men returning an average of 68.68€-cent (41.6%). A T-test shows that this gender difference is significant ($p < 0.01$). When examining the amounts returned based on the amounts received, significant gender differences were found for all amounts received.



Women			Men		
Amount received	Mean A.B.	%	Mean A.B.	%	
30	12,38 €	41,3%	11,95 €	39,8%	
60	23,35 €	38,9%	23,98 €	40,0%	
90	33,83 €	37,6%	35,88 €	39,9%	
120	46,85 €	39,0%	49,20 €	41,0%	
150	57,29 €	38,2%	61,11 €	40,7%	
180	68,58 €	38,1%	73,90 €	41,1%	
210	81,16 €	38,6%	87,71 €	41,8%	
240	92,77 €	38,7%	100,68 €	42,0%	
270	103,41 €	38,3%	114,35 €	42,4%	
300	118,60 €	39,5%	128,03 €	42,7%	
Mean	63,82 €	38,8%	68,68 €	41,1%	

Additionally, it demonstrates that the percentage returned remains constant regardless of the amount received, which contradicts the findings of Garbarino and Slonim (2009) and Bellemare and Kröger (2007) that there is a concave relationship between the amount received and the percentage returned.

I examine the impact of gender on the amount returned using Tobit regressions censored at the minimum and maximum amounts that can be returned. The dependent variable in my first model is the mean amount returned by the responder, which I average over all hypothetical offers (ReturnAll). The independent variables are Male and Age. On average, men exhibit significantly more reciprocal behavior, returning 7.1% (4.56/63.82) more than women. The regression results also suggest that the responder's age affects the amount returned only for men.

Tobit regression			
Variable	ReturnAll	ReturnWomen	ReturnMen
Constant	36,853	42,385	35,698
Male	4,563		
Age	1,285	0,981	1,588
Observations	1004	501	503
Left-censored	15	7	8
Uncensored	976	488	488
Right-censored	13	6	7

After that, I explore if the inverse U-shaped correlation between age and the amounts returned varies between genders. To do this, I calculate two independent models for males and females.

The outcome variables are the amounts returned by males (ReturnMen) and females (ReturnWomen), respectively. The predictor variables is Age. The results demonstrate that the positive coefficient for Age and negative

coefficient is only significant for males. On the other hand, I do not observe a significant age pattern for females. This implies that the general inverse U-shaped relationship is not applicable to both genders, but only to males.

I also have a focus on how the different returns could influence the reciprocity since the bigger the amount is received, the bigger the risk could be to give back that percentage.

The result of 10 separate regressions for the diverse returns (30, 60, 90...300) showed two interesting outcomes. Firstly, men returned significantly higher amounts when the proposers' offers were higher than 120 euros in cents. However, there were no gender differences in returns for amounts received of 30, 60, 90, and 120 euros in cents. This indicates that men and women exhibit similar reciprocal behavior when the proposer shows little trust, but men reciprocate more if the proposer shows a higher level of trust.

While, in men, as the amount received increases, the percentage of the amount returned also increases, this is not the case for women. In fact, the percentage either decreases or remains the same. This difference can be attributed to the fact that women are generally more risk-averse. They are not motivated to reciprocate more and more with larger sums of money as men might be, and instead tend to be more cautious.

3.4 Findings

The findings of this study have important implications for the fields of economics and psychology, as trust and reciprocity are central concepts in these disciplines. In economics, trust and reciprocity play a crucial role in the functioning of markets and the formation of social networks. The study's findings suggest that there may be gender disparities in these processes, which could have significant implications for the efficiency of markets and the formation of social capital.

Furthermore, in psychology, trust and reciprocity are important elements of social relationships, and the study's results suggest that there may be gender differences in the development and maintenance of these relationships.

These differences could have implications for the ways in which men and women form and maintain social networks, as well as for their experiences of social exclusion and inclusion.

Additionally, the results of this study also have important implications for policy-making. If men tend to trust more and reciprocate more than women, then policies aimed at fostering trust and reciprocity in society may need to be designed and implemented differently for men and women.

It is important to note, however, that the findings of this study should not be over-generalized, as the sample was limited to the German population and the results may not be applicable to other populations. Further research with larger, more diverse samples is needed to confirm and expand upon these findings.

In conclusion, the present study provides new insights into gender disparities in trust and reciprocity among a diverse population, highlighting the importance of considering both gender and socio-demographic factors in future studies on this topic. The results also underscore the importance of large-scale experiments with diverse samples in providing a more representative picture of behavior and of the underlying determinants of trust and reciprocity in society.

Conclusion

The aim of this thesis was to delve into the complex interplay of elements and factors that influence trust and reciprocity in relationships, whether they be social, human, or commercial. Trust and reciprocity are highly personal traits that vary from person to person, and much has been written and discussed regarding their origin - whether they are shaped by external factors or if they are inherent to each individual. Given the multitude of questions and possible answers surrounding these two aspects, I sought to examine if there was a significant difference between trust and reciprocity in men and women.

It is widely accepted that the factors that influence trust and reciprocity are numerous and can also impact gender. In light of this, I embarked on a quest to determine if there was a real difference between male and female gender, and if so, whether this difference was influenced by external factors or not. My research included extensive reading of various experiments, mainly conducted on school groups and smaller sample sizes, where I discovered a blind trust game experiment that was pertinent to my study. I analyzed the data, taking into consideration the fact that women are known to be more risk-averse, as previous research has shown, and since trust is directly linked to the level of risk, it was hypothesized that women, regardless of age, income, and other factors, would be more prudent, less likely to take risks, and therefore less likely to trust and reciprocate.

In conclusion, this thesis aimed to shed light on the impact of external factors on trust and reciprocity in men and women. The results of the experiment support the hypothesis that women are more cautious and less likely to trust and reciprocate, but further research is necessary to confirm these findings on a larger scale and to gain a deeper understanding of the relationship between the various factors and these two fundamental elements of relationships. It is crucial to remember that these results should not be generalized to all women, as each person's trust and reciprocity are shaped by a unique combination of factors, including gender, but also cultural, social, and personal experiences. In essence, this thesis underscores the importance of recognizing the dynamic and nuanced nature of trust and

reciprocity in relationships and the role that various elements and factors play in shaping these fundamental components.

This thesis helps getting a clearer view on the different behaviours between gender in trust and reciprocity, even if the results are relevant, more studies and experiments should be done in future since the variable “gender” can evolve and itself can be influenced by other factors and I wouldn’t be surprised if in the next years a similar experiment will point out an even larger gap between gender behaviour or maybe this gap is going to narrow.

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Summary

Trust and reciprocity factors with a focus on gender : theory and experiments

Trust and Reciprocity

Trust is an abstract mental attitude that involves relying on someone to act in a certain way, with the belief that they will act in one's best interests. Trust is influenced by the characteristics, circumstances, and interactions of the parties involved, as well as the trustor's expectations and assumptions. Trust can be difficult to define and measure, as it can involve elements of belief in someone's honesty, fairness, or competence, as well as an understanding of probability and risk. Despite its complexities, trust is an important aspect of many human relationships, including romantic, familial, business, political, and medical relationships. In summary, trust in economics is a complex concept that involves risk and uncertainty. Most definitions of trust include a component of risk, and it is seen as a decision made by an agent to expose themselves to the danger and uncertainty of another's future action. The idea of trustworthiness focuses on a person's general character, while trust is unique to a specific action and takes into account situational factors and the person's attitude. Trust is a three-part relationship where one agent trusts another to carry out a specific task. The calculus used to determine trust involves considering the potential gain if the other actor performs honestly, the likelihood that they will, and the potential loss if they don't. In social theory, there are two fundamental elements of pro-social relations: goal-adoption (the desire to favor the other and do something for them) and propensity to depend on the other and assign them to further our objectives and ensure our welfare. The distinction between these two is crucial in understanding pro-social relationships. Pro-

social relationships do not start with 1 reciprocation but with some form of exchange. Benevolence and trust are complimentary and connected, but they can also exist separately and only be unilateral under certain circumstances. Trust is not a sentiment held by the helper but by the expecting beneficiary. The act of trusting is not inherently cooperative and can be based on the expectation of receiving something in return or the manipulation of the other person's behavior to get the desired result. Trust can also be based on an emotive reciprocation incentive or belief in the other's intentions or actions. Trust is a mental disposition that includes positive evaluations and expectations about another person's capability and willingness to perform a specific action. It involves a decision to rely on another person to achieve one's goals, and is influenced by factors such as perceived risk and the worth of the goal. The degree of trust is determined by the level of certainty about the person's competence and intentions to perform the required action. Reciprocity is a social rule in social psychology that rewards good deeds by responding to them with further good deeds. As a social construct, reciprocity implies that individuals usually behave considerably more kindly and cooperatively in reaction to friendly activities than would be expected by the self-interest model; in contrast, they regularly behave much more vilely and even brutally in response to hostile actions. There are three primary types of reciprocity: generalized reciprocity, balanced reciprocity, and negative reciprocity. Generalized reciprocity is a form of trade between members of families or social groups and is based on the assumption that the other person will reciprocate the favor. Balanced reciprocity is a trade in which the worth of the trade is calculated and the favor is expected to be repaid in a predetermined amount of time. Negative reciprocity is when one party tries to benefit more from the trade than the other. The act of exchanging items with others in order to benefit both parties is known as reciprocity,

and it plays a crucial role in establishing and maintaining relationships. The process of socialization is crucial in fostering the demand for reciprocity, as children gain the ability to share, take turns, and engage in reciprocal behavior through experience. The rule of reciprocity is also known as the norm of reciprocity and states that if someone does something for you, you are expected to do the same for them. In terms of economics, reciprocity is both a new and an established concept. In the past, political economy was linked to exchanges, and the word reciprocity was used to refer to a mutual relationship in which two or more subjects give and receive either simultaneously or sequentially. However, with the growth of game theory, economics developed a second perspective on reciprocity, the so-called folk-theorem, which states that reciprocity can emerge and maintain cooperation if the relations are repeated an infinite number of times. In recent years, the concept of reciprocity in the social sciences has gone beyond the earlier conception of reciprocity as a form of contractual trade or as a result of repeating game theory. Today, researchers often refer to reciprocity as "strong reciprocity" in order to differentiate it from the two earlier approaches. Strong reciprocity is a far more complicated notion that applies to a much larger range of circumstances and is a method of thinking about reciprocity and its function in social interaction. Reciprocity as a new type of economic reasoning has evolved in recent years due to the birth and development of experimental and behavioral economics. The traditional view of rationality in economics was that agents only consider their own welfare and not that of others. However, empirical research has shown evidence of economically important behaviors not driven by self-interest. The theory of reciprocity, first formalized by Rabin in 1993, suggests that agents not only care about their own well-being but also about the well-being of others, and that their reciprocating behavior is conditional and selective based on the intents they associate

with other people's behavior. This idea of reciprocity has been developed and expanded in recent years through various experiments, leading to a more pragmatic methodology for analyzing actual human behavior. Reciprocity is now seen as a key component in theories based on decision and behavior analysis, and experiments have revealed behaviors where players are more generous and trustworthy than predicted by rational choice theory. ³ The neoclassical theory of economics holds that people act selfishly in order to maximize their own economic well-being. However, this assumption has been challenged by empirical evidence, which shows that people often behave differently in economic situations, exhibiting altruistic behavior and a concern for others' well-being. This deviation from pure self-interest has led to the examination of factors such as trust, reciprocity, and fairness in bilateral and group interactions. Economic instruments such as the dictator game, trust game, lost wallet game, and ultimatum game have been used to study these concepts. The results of these studies have challenged the notion of pure self-interest and indicate a need for a more comprehensive understanding of human behavior in economic interactions. The Trust Game is an experimental game used to study reciprocal behavior between two players, known as the first mover and second mover. The first mover decides how much of their initial endowment to give to the second mover, which is then tripled. The second mover then decides how much to return to the first mover. The outcome of the game is that the first mover typically sends half of their endowment, and 95% of this is returned by the second mover. This result contradicts the conventional theory of pure self-interest, where players only act to maximize their own payoff. Instead, this has led to the development of models that take into account altruistic and inequity-averse preferences, where people consider the payoffs of others and attempt to minimize the reward differential. There is also evidence that people judge others' behavior based on

their intentions and the possibilities available to them. The desire for social respect and reputation is a fundamental source of motivation for people. Social respect is defined as the acceptance of one's own "type" by others, which can be signaled through reciprocal behavior. People want to keep their actions and values in alignment with their self-image and may learn about their true preferences through their past actions. Some people may also want to imitate others' behavior, especially if they are conformists and want to maximize their utility by following the majority. Theories used to explain reciprocal behavior in trust games are based on the Neo-Humean Model of Practical Reason (NHMPR), which is influenced by Hume's theory of motivation. The NHMPR states that actions are motivated by desires and beliefs about which actions lead to the fulfillment of particular goals. The reasons for action justify the action as rational by showing that it was the best way to achieve the agent's goals. There is a debate between internalism and externalism regarding reasons for action, with internalism stating that reasons for action must serve as a motivation for the agent and externalism stating that reasons for action do not necessarily imply a motive. The Alternative Kantian Model of Practical Reason (KMPR) is in relation to the study of reciprocal behavior in Trust Games. The KMPR differs from the commonly accepted model of practical reason by suggesting that motivations for action do not have to originate from specific desires. The KMPR takes an externalist perspective on reasons for action, meaning that justifications for behavior do not have to be connected to the agent's personal motivations. The KMPR argues that reasons for action do not have to be motivated by desires, even if they are. The key distinction between the KMPR and the commonly accepted model is that the KMPR believes that reasons for action can be the source of motivation, while the commonly accepted model assumes that motivations must originate from desires. The KMPR explains reciprocal behavior in

Trust Games by suggesting that the second-mover behaves reciprocally because they believe they have motives that prohibit them from doing otherwise, and the desire to reciprocate is driven by moral arguments rather than pre-existing desires.

Determinants of trust and reciprocity: experimental evidence

Past experience plays a crucial role in shaping an individual's perception of trust and their willingness to engage in reciprocity in future interactions. Positive past experiences can lead to a greater sense of trust and comfort, which can encourage individuals to engage in mutual exchange and build relationships. On the other hand, negative past experiences can lead to mistrust and a reluctance to engage in future interactions. Past experiences are not the only factor that influences trust and reciprocity, but they can be a strong influence, especially in cases where the experiences are significant or repeated. Past experiences can also shape a person's expectations of reciprocity in future interactions. For example, if a person has had negative past experiences with a particular group of people or organizations, they may have lower expectations of reciprocity in future interactions with that group. This can lead to lower actual reciprocation, which in turn confirms the person's lower expectations. Social norms play a significant role in shaping trust and reciprocity in social interactions. Social norms are informal rules that govern behavior in a group or society, and they can vary widely across different cultures and contexts. Social norms can shape trust by influencing the expectations and behaviors of individuals in a group or society. For example, in a society with strong social norms around honesty and integrity, individuals may be more likely to trust others because they expect that others will act in an honest and trustworthy manner. People may be more likely to share personal information, lend money or resources, or entrust tasks to others because they

believe that those who they interact with will act in an honest and trustworthy manner. In contrast, in a society with weak social norms around honesty and integrity, individuals may be less likely to trust others because they expect that others will act in a dishonest or untrustworthy manner. Social norms can also shape trust and reciprocity by influencing the way that individuals interpret and respond to the actions of others. For example, in a society with strong social norms around politeness and respect, individuals may be more likely to trust others when they receive a polite or respectful response from them. They may interpret politeness and respect as a sign of goodwill and trustworthiness. On the other hand, in a society with strong social norms around gratitude and appreciation, individuals may be more likely to reciprocate when they receive a favor, gift or service because they feel grateful and appreciated. They may interpret gratitude and appreciation as a sign of respect and mutual benefit. Group membership can significantly impact the level of trust and reciprocity within a group. On one hand, being a member of a group can create a sense of belonging and shared identity, which can lead to the development of trust and reciprocity among group members. When individuals feel like they are part of a community and share common goals and values, they are more likely to trust one another and respond positively to each other's actions. Group activities, such as team-building exercises, can also help to foster trust and reciprocity among group members by creating a sense of shared accomplishment and camaraderie. However, group membership can also have negative effects on trust and reciprocity. In some cases, group membership can be based on characteristics such as race, gender, or socioeconomic status, which can lead to prejudice and discrimination. This can create mistrust among group members and create a more toxic group dynamic, reducing trust and reciprocity. Group membership can also create a sense of competition and rivalry among group members, which can

lead to conflicts and reduce trust and reciprocity. Group membership can also create power imbalances among group members, where some members have more power or influence than others, reducing reciprocity and responsiveness among group members. It is important for group leaders and members to actively work to foster a culture of trust, reciprocity, and inclusivity within the group. This can be achieved by promoting open communication, shared decision-making, and a commitment to mutual respect and understanding among group members. Group leaders can also design and facilitate activities that promote collaboration, mutual support, and positive interactions among group members. Additionally, group 7 leaders can actively address and manage any issues or conflicts that may arise within the group, working to promote a positive group dynamic and a culture of trust and reciprocity. Effective communication and transparency are key components of building trust and promoting reciprocity within a group or organization. Clear and open communication allows group members to understand one another's perspectives, goals, and intentions, which can build trust and promote mutual understanding and cooperation. Transparency in decision-making helps group members to understand the reasoning behind decisions, which can lead to increased trust and accountability. On the other hand, a lack of communication and transparency can lead to mistrust and negatively impact reciprocity among group members. When group members feel that they are being kept in the dark or that information is being withheld from them, they may become suspicious and less likely to respond positively to one another's actions. This can lead to misunderstandings and conflicts, which can erode trust and reciprocity within the group. Power and status play a crucial role in shaping the level of trust and reciprocity within a group or organization. On the one hand, individuals with more power or status may be seen as more trustworthy and reliable, and may initiate positive actions that promote

cooperation and collaboration. On the other hand, power imbalances and excessive power or status can erode trust and reciprocity, creating conflicts and tension within the group. To promote a positive and supportive group dynamic, it is important for group leaders and members to actively work towards maintaining a balance of power and status within the group. This can include promoting open and transparent communication, encouraging all members to participate and contribute, and holding individuals with more power or status accountable for their actions. By fostering a culture of trust and mutual support, groups and organizations can work more effectively towards their shared goals and objectives. 8 Self-interest can have a significant impact on trust and reciprocity within a group or organization. Self-interest refers to an individual's own personal goals, needs, or desires and is a natural human tendency. In some cases, self-interest can promote trust and reciprocity among group members, but it can also create barriers to trust and reciprocity. When individuals are able to balance their own self-interest with the interests of the group, they may be viewed as more trustworthy and more likely to initiate positive actions towards other group members. This can create a more productive and successful group dynamic. However, when individuals prioritize their own self-interest over the interests of the group, they may be viewed as less trustworthy and less likely to respond positively to others' actions. This can lead to conflicts and tension within the group and can erode trust and reciprocity. Additionally, self-interest can create power imbalances within a group, which can negatively impact trust and reciprocity. When some members have more power or influence than others, they may be more likely to prioritize their own self-interests, which can create a toxic group dynamic. This can make it difficult for group members to trust one another and respond positively to one another's actions. Fairness is a critical factor in shaping trust and reciprocity in social interactions. When

people feel that they are being treated fairly, they are more likely to trust the person or organization making decisions, respond in a reciprocal manner, and engage in cooperative behaviors. This is because fairness is often seen as an indicator of good intentions and a willingness to be transparent and accountable, which can lead to a sense of security and stability, community and trust among individuals. On the other hand, when individuals feel that they are being treated unfairly, they are less likely to trust the decision maker, respond in a reciprocal manner, and engage in positive behaviors. This can lead to feelings of resentment or mistrust, a lack of cooperation and participation, and a breakdown in trust and community among individuals. 9

Perceptions of fairness can also be influenced by power dynamics and social hierarchies. Those who hold more power and privilege may have more influence over what is considered fair and may be more likely to have their interests protected. This can lead to a lack of reciprocity among marginalized groups, who may feel that their interests are not being taken into account. Empathy is a key aspect of human interaction, as it involves understanding and sharing the feelings of others. When people are empathetic towards each other, they are more likely to connect on an emotional level, feel understood and respected, and engage in positive behaviors that foster trust and cooperation. Empathy allows individuals to put themselves in someone else's shoes and respond appropriately, which can play a critical role in conflict resolution and rebuilding trust after a breach. Reciprocity, on the other hand, refers to the idea that people tend to respond in a similar way to how they are treated by others. When individuals are treated empathetically, they are more likely to respond positively and engage in cooperative behaviors, leading to a sense of community and trust among individuals. Conversely, when people are not treated empathetically, they are less likely to respond positively and engage in cooperative behaviors, leading to a

breakdown in trust and cooperation. The relationship between empathy and reciprocity is closely linked, as empathy greatly influences how individuals respond to positive actions of others. When individuals are empathetic towards others, they are more likely to respond in a reciprocal manner, as empathy leads to a greater sense of connection and understanding, which in turn motivates individuals to take positive actions towards others. Additionally, empathy can lead to a greater sense of compassion, which can also influence reciprocity. Risk can play a major role in trust and reciprocity in many ways. On one hand, high levels of risk can undermine trust and discourage reciprocal behavior. This happens because high risk can lead people to be more self-protective and less focused on the relationship as a whole, which can result in a breakdown of trust and cooperation. For example, if someone repeatedly fails to follow through on promises or commitments, or if a company has a history of unethical behavior or financial mismanagement, it can be difficult for them to establish and maintain relationships with others. On the other hand, low levels of risk can foster trust and reciprocity. For example, if someone consistently demonstrates trustworthy behavior, they are more likely to build trust with others and receive reciprocal behavior in return. This is also true in a business context, where a company that operates transparently, ethically, and with a focus on customer satisfaction is more likely to build strong relationships with its stakeholders and earn their trust. The perception of risk can be just as important as actual risk in shaping trust and reciprocity. If someone perceives a high level of risk in a situation, even if the actual risk is low, they may still be less likely to engage in reciprocal behavior or to trust others. Perception of risk can be influenced by past experiences, cultural or societal norms, or the type of relationship being considered. Gender can have a significant impact on trust and trust-related behaviors. Research has shown that men tend to be more trusting of other men than of

women, which is referred to as the "male trust advantage." This bias is thought to stem from socialization, as men are often taught to trust and rely on other men, while women are taught to be more cautious and to trust less. Women, on the other hand, tend to be more trusting of both men and women, especially in close personal relationships. It's important to note that these generalizations are not absolute and that trust can be influenced by a variety of other factors, such as personality, life experiences, and cultural background. For example, research has shown that women may be more likely to trust people in certain types of relationships or situations, such as family or close friends, while men may be more likely to trust people in other types of situations, such as business or professional relationships. Moreover, trust can also be influenced by power dynamics, where individuals in positions of power tend to be more trusting and those in less powerful positions tend to trust less. This can explain why women, in general, tend to trust less than men, as they are often in less powerful positions in society. 11 In conclusion, while gender can have a significant impact on trust and trust-related behaviors, these tendencies should be taken with caution as trust is a complex phenomenon influenced by multiple factors. Understanding these gender differences in trust can help us better understand the role of gender in our personal and professional relationships, and can help us work to create more inclusive and equitable environments where trust can flourish. The relationship between gender and entrepreneurship is a topic that has garnered significant attention in the academic literature. The results of studies on this topic have been mixed, with some studies finding significant differences between men and women in entrepreneurial activity, while others find no differences. One major reason for the gender gap in entrepreneurship is related to differences in risk-taking propensity between men and women. Gender differences in risk-taking tendencies have been widely studied and the

results have consistently shown that women tend to be less likely to take risks compared to men. The reasons for these disparities are not entirely clear, but some studies suggest that personality, rather than gender, is a stronger explanatory factor. Other studies have found that women are less trusting and more cautious in evaluating their targets and actions thoroughly, which may provide a better explanation for the observed disparities in risk-taking. Trust has also been found to be a crucial factor in examining gender differences in entrepreneurship. Studies on gender differences in trust behavior have produced mixed results, with some studies showing that females are less trusting than males, while others show the opposite or no difference. The relationships between gender and trust are complex and may not be solely based on trust, but rather the result of a combined effect of trust and risk-taking. Trust and risk-taking are closely related and can shape individual decisions to take risks and participate in business exchange activities, including entrepreneurship. In conclusion, the author proposes a new model that incorporates trust as a crucial factor in examining gender differences in entrepreneurial intentions and activities. The author suggests that previous models and studies have been limited in their understanding of the relationship between 12 gender, risk-taking, and entrepreneurship and that trust needs to be considered as an integral part of the equation. The author argues that future research should explore the independent effects of trust and risk-taking, as well as their combined effects, on entrepreneurial intentions and activities. The model can be used as a basis for future research in the field of gender and entrepreneurship and can inform efforts by governments and other stakeholders to promote female entrepreneurship.

Experiment analysis

Experiments in economics have shown that individual behavior is not only motivated by trust, but also by reciprocity. Positive reciprocity has been observed in trust and gift exchange games, while negative reciprocity motivates people to punish unfair behavior. Studies have also shown that social comparison impacts reciprocal behavior, with weaker reciprocity towards employers observed when lazy coworkers are generously compensated. Research has also explored the impact of personal factors, such as gender, on trust and reciprocity. Most studies have found that men tend to trust more, while women tend to be more reciprocal. These gender differences can have significant implications for charitable giving, bargaining in the labor market, and household decisions. However, laboratory experiments examining gender differences in trust and reciprocity often involve small, homogeneous samples, leading to questions about the reliability and generalizability of these findings. In light of these limitations, I conducted a study using a large, heterogeneous sample of the German population to investigate gender differences in trust and reciprocity. The data were collected from an online experimental trust game and were representative of the German population in terms of gender, age, and residential region. The study controlled for various socio-demographic factors that may affect participants' behavior and is the first of its kind to examine trust and reciprocity in a large, representative sample of the German population using an anonymous online experiment. I wanted to see if a heterogeneous experiment would confirm the hypothesis that women are more risk-averse than men and that trusting a stranger is a risk. My goal was to provide more reliable and generalizable insights into the relationship between gender and trust and reciprocity. The experiment was designed to study trust behavior in a variation of the investment game

with 1004 participants from Germany selected from a pool of online panel members. The sample was chosen to represent the German population and participants were invited to participate through email and 14 directed to the web-based experiment. Each participant played the trust game in two roles - as the proposer and then as the responder - with decisions incentivized through payment based on their choices and those of their randomly matched partners. The experiment was anonymous, adding an extra layer of complexity. In addition, a short questionnaire was administered to gather socio-demographic information about the participants. The experiment provides valuable insights into human behavior in trust games and the results can be used to further understand such scenarios. The results of the experimental trust game showed that men tend to trust more than women, with men sending an average of 17.5% more than women. Results from Tobit regressions suggest that gender and age have an impact on the amount sent, with older men sending more until the age of 43, and men exhibiting a significant positive correlation with age. Results also show that men exhibit more reciprocal behavior than women, returning 7.1% more on average, with the positive coefficient of age affecting the amount returned only for men. Results from separate regressions for diverse returns showed that men return significantly higher amounts when the proposer's offers are higher than 120 euros in cents, while there are no gender differences in returns for lower amounts. This indicates that men reciprocate more when the proposer shows a higher level of trust. Women, on the other hand, either decrease or maintain the same percentage returned as the amount received increases, indicating that they are more risk-averse and cautious. The study on gender disparities in trust and reciprocity has significant implications for economics, psychology and policy-making. The findings suggest that there may be differences between men and women in these areas, which could affect the efficiency of markets,

the formation of social relationships and social networks, and the success of policies aimed at promoting trust and reciprocity. However, the study should not be over-generalized and further research is needed to confirm and expand upon these findings. The importance of considering gender and socio-demographic factors in future studies on this topic is emphasized, as well as the need for large-scale experiments with diverse samples to provide a more representative picture. 15 This thesis explored the relationship between trust and reciprocity in men and women and aimed to determine if there was a difference between the two genders. The author reviewed previous research and conducted a blind trust game experiment to analyze data. The results showed that women tend to be more cautious and less likely to trust and reciprocate compared to men. However, the author stresses that these results should not be generalized to all women as trust and reciprocity are influenced by a unique combination of factors, including but not limited to gender. The thesis highlights the importance of recognizing the dynamic and nuanced nature of trust and reciprocity in relationships and the role that various elements and factors play in shaping these fundamental components. Further research is needed to gain a deeper understanding of the relationship between these factors and trust and reciprocity. 16

