TRUST IN THE SHARING ECONOMY: THE CASE OF UBER & SELF-DRIVING CARS

by

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ABSTRACT

"Sharing economy" is a new concept that shifts how consumers interact and consume products and services. The main, and potentially most important, factor that facilitates the sharing economy is trust. The paper revieweds the literature surrounding the implications of trusts in the online environment, and especially in different sharing economy platforms. Despite its prevalent applications in multiple industries, this paper only focused on the transportation industry, with the case of Uber and self-driving cars. In the literature review, the paper addressed the sharing economy by studying its definitions, trust, dispositions to trust, familiarity with the platform, perceived risks, and self-driving cars. The paper presented ten hypotheses about consumers' trusting intentions in Uber and self-driving cars using past research studies as the foundation. Along with the exploration of the literature, a study was conducted to collect data on consumers' trust constructs in the two technologies. The study examined participants' disposition to trust and attitudes towards Uber and self-driving cars. The statistical analysis was conducted to confirm the correlations among trust constructs and consumers' trusting intentions in Uber and self-driving cars. The paper concluded with the discussion of its practical implications, limitations, and further research areas.

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INTRODUCTION

Our economy has evolved through several stages. We started out when consumers consumed products that they grew at home on demand. Then the idea of trade emerged when people began to trade goods with each other. Nowadays, we have defined a new concept in the economy called the "sharing economy," which gives rise to the shift from the mentality of "What's in it for me" to "What's in it for us" (Bostman, 2011). In other words, consumers now share their idle resources, especially via the facilitation of technology.

The main, and potentially most important, factor that facilitates the sharing economy is trust. Joe Gebbia, the co-founder of Airbnb, shares in his TED talk that one of the initial challenges of Airbnb was to create trust among strangers and that he had to design Airbnb in a way that build trusts. In this regard, trust is an indispensable part of the sharing economy that encourages users to provide and receive services from strangers. In her recent research, Rachel Botsman (2017) states that "trust is the new currency of the economy." According to Pricewaterhouse Coopers' research (2015), 69% of consumer participants agree they feel that they will not trust sharing economy companies until they are recommended by someone they trust. With its critical role in the sharing economy, trust is a popular and important topic to examine.

Due to the increasing scale of the sharing economy, it is beyond the scope of any research to analyze the variety of services provided. To specifically examine consumers' trust in this environment, this paper only focuses on Uber, the major player in the automobile and transportation industry, which is also being transformed by the introduction of self-driving cars. Interestingly, self-driving car manufacturers are collaborating with sharing economy platform providers to transform the industry. For instance, Uber recently released a video of its first self-driving Uber in Pittsburg doing its test run. There have been mixed reviews and reactions to the

introduction of self-driving cars, mostly related to consumers' trust towards this new technology. Again, trust plays a critical role in the success of self-driving cars.

As the sharing economy continue to grow and transform businesses, researchers have been proactive in studying this phenomenon. Several researchers have examined how the sharing economy has been formed and offered multiple definitions for this phenomenon (Bostman, 2011). Another key topic that researchers have looked into is the role and implications of trusts in the sharing economy. Mittendorf (2017) suggests that consumers' trust in Uber is significantly impacted by their trust in the platform itself, which is facilitated by technology. Thus, to understand consumers' trust in Uber as a platform is to understand the trust in technology that facilitates it. Because there is no research on technology trust in the sharing economy, this research aims to fill this gap, as well as examine consumers' trusts in Uber and self-driving cars to further understand the trend of trust.

The study allows for deeper understanding of consumers' trust in technology in the context of the sharing economy. Even though there are academic research studies that prove the existence of consumers' trust in technology and of consumers' trust in Uber (the platform), none examines how trust in technology plays out in the context of the sharing economy. This research aims to provide a deeper understanding of how technology generates trusts in the sharing economy and how it impacts consumers' intentions in participating it. As the sharing economy has the potential to grow even more moving forward, it is important that consumers, and even business leaders, understand how trust in technology impacts consumers' trust, which in turn impacts their intentions to use the platforms. Understanding this trend will also allow business leaders to better evaluate their investment decisions in technology and in sharing economy companies.

This paper uses past research to explore more fully consumers' trust in Uber and apply those findings into a new technology that will potentially change the automobile and ridesharing industry: self-driving cars. Self-driving cars have been attracting the attentions of numerous business investors. Even though not every consumer will purchase this new technology, self-driving cars will directly impact general consumers because self-driving car manufacturers are collaborating with ridesharing providers to push this technology into the sharing economy. For instance, Volvo agreed to supply Uber with 24,000 self-driving cars at the beginning of 2019 (Isaac, 2017). In 2016, Uber set up its first Advanced Technologies Center in Pittsburg to pilot its first self-driving Uber. Considering how self-driving cars have been evolving, consumers should be aware of the new technology and understand how they will react to this new technology. This paper will not be able to "predict" every consumer's reaction to self-driving cars, but it will use the foundation of past research to "predict" and understand potential reactions. In a way, the research helps alleviate the anxiety of consumers when facing self-driving cars by analyzing their past trusting intentions in Uber, a relatively new technology that has disrupted the automobile industry. From the business side, understanding consumers' potential reaction to self-driving cars allows business leaders to tailor their marketing strategies to customers' concerns and needs. For instance, when Airbnb first came out, consumers were skeptical of the idea of living with strangers and living in their apartments for a few days. Aware of this concern, Airbnb released its marketing campaign called *Never A Stranger* that attacked the stigma of staying at a stranger's house, which in turn increased the startup's brand awareness by 7%. Thus, understanding consumers' potential reaction to self-driving cars allows businesses, specifically car manufacturers like Tesla or ridesharing providers like Uber, to create appropriate marketing campaigns to address consumers' concerns and encourage usage.

This paper reviews literature on the topic of sharing economy, trust, trust in the sharing economy, and trust in technology to study millennial students' attitudes and collect conclusions about consumers' trust. The research also studies articles by well-known publishers on self-driving cars, due to the limited research on this novel technology. The research will collect information from Texas Christian University students to analyze and draw insights on millennial consumers' trust intentions in Uber and self-driving cars. Limiting the scale of survey audience allows the research to control more similar aspects of potentials users and identify more easily the differences between their trusts in Uber and in self-driving cars.

LITERATURE REVIEW

1. Sharing economy

"Sharing economy" is a popular term among current discussions. However, researchers and scholars have struggled to create a clear-cut definition of "sharing economy." The term is closely related to, and sometimes used interchangeably with, a broad variety of topics such as "collaborative consumption" (Botsman 2013; Botsman and Rogers 2010), "access-based consumption" (Bardhi and Eckhardt 2012; Belk 2014), "peer-to-peer sharing and collaborative consumption" (von Hoffen et al. 2015), "the mesh" (Gansky, 2010), or "gig economy" (Murphy 2016). The Sharing Economy is also described as the "phase of an ongoing evolution of economy and society that is shaped in part by digital technologies" (Sundararajan, 2016).

Despite the lack of a clear definition, researchers have crystallized some key elements of the sharing economy. Botsman, 2011 solidifies four main guiding principles of the sharing economy: critical mass, idling capacity, belief in the commons, and trust between strangers. The "sharing economy is about consumer-to-consumer (C2C) platforms and not about renting or leasing a good from a company (business-to-consumer); "about consumers providing each other temporary access to a good, and not about the transfer of ownership of the good;" and "about more efficient use of physical assets and not about private individuals delivering each other a service" (Frenken, K., Meelen, T., Arets, M., and Glind, P., 2015). The solidification of these three key elements underscores the fundamental change that the "sharing economy" is bringing: we, as consumers, are shifting from a "consumption" mindset to a "sharing" mindset. Indeed, sharing have been around for a long time; however, the "sharing economy" is implemented on such a broad scale never seen before, due to the facilitation of technology.

It is also important to realize that there are four main platforms in the "sharing economy." (Murphy 2016) The first platform is "casual, spontaneous, and one-time transactions" such as

lending a relative something you own. The second platform is slightly more formal, but still closer to the personal end of the spectrum. “Building agreements” allow individuals with pre-existing relationships to make slightly more formal arrangements. The third platform involves “building organizations” to create lasting sharing institutions in a community. Finally, the most formal platform of the sharing economy envisioned by Orsi is “building larger-scale infrastructure” to create an ongoing sharing economy. Two examples, and “titans” in the fourth kind of platforms are Uber and Airbnb (Murphy 2016).

The sharing economy has been, and will be, growing exponentially. According to Statista, the number of sharing economy users in the United States in 2016 was 44.8 million users, and this number is expected to reach 86.5 million users in 2021. Along with its rapid growth, the sharing economy is shown to have both positive and negative impacts on environmental sustainability, market structure, employment, and regulation (Plenter, 2017). However, statistics show that the sharing economy’s values have outweighed its costs. “Founded in 2008, AirBnB has enabled the peer-to-peer sharing of housing units, boasting currently more than 600,000 listings in 192 countries. The commercial success has attracted substantial investor interest, putting AirBnB’s current valuation at approximately $10 billion” (Murphy, 2016). The collaborative-housing market is growing rapidly at a rate exceeding 100% in 2013 (Murphy, 2016). Uber, just around five year old, now operates in more than 250 cities worldwide and was valued at $41.2 billion as of as of February 2015 (Pricewaterhouse Coopers, 2015). Among U.S. adults who are familiar with the sharing economy, 86% agree that it makes life more affordable; 83% agree that it makes life more convenient and efficient (Pricewaterhouse Coopers, 2015). The sharing economy has created several economic values, especially in the United States, and will continue to grow. Of consumers who have tried the sharing economy, 72% agree that “I

could see myself being a consumer in the sharing economy in the next two years" (Pricewaterhouse Coopers, 2015). Within only a few years, the sharing economy has changed not only "what we consume" but also "how we consume" (Botsman, 2011). Because of its growth, the sharing economy is an important concept that business leaders should understand, especially in terms of its functionality and future implications.

2. Trust

Trust is an important and natural human behavior, and thus, there have been several research studies on trust in different environments and from the viewpoints of different fields of studies. Trust can be viewed from rational and social perspectives. A rational perspective of trust focuses on self-interests: increases in trust decrease transaction costs of relationships as it reduces self-protective actions in preparation for the possibility of others' opportunistic behavior. A social perspective relates to moral duty: a social group holds values regarding one's values to others (Jarvenpaa, S., Knoll, K., Leidner, D., 1998). Trust, from the sociological understanding, can also be defined as a concept to reduce complexity, which makes it easier for individuals to rely on actions of others (Luhmann, 1979).

Further social sciences literature states that the rapid progress of technology influences the momentousness of trust, as especially the information technology continuously changes causation in social systems (Luhmann, 1979). In this context, the need for trust thrives predominantly in socially distant relationships, such as in the online environment (Jarvenpaa and Leidner, 1999). Online interactions are believed to require an adequate trust basis to be initiated between two strangers (Gefen, 2000; Rosen et al., 2011). Following this logic, trust is critical in stimulating interactions in the online environment, respectively in a variety of computer-mediated environments, such as in the e-commerce industry (Gefen, 2002), crowdsourcing

(Zheng et al., 2011), virtual teams (Jarvenpaa and Leidner, 1999), and the sharing economy (Weber, 2014). In the context of the sharing economy, researchers have identified a few factors that impact people's trust in the sharing platforms: disposition to trust (a person's natural tendency to trust) and platform-related interactions such as familiarity with the platform and perceived risks of the platforms, which will be discussed later in this section.

Regardless of platforms, whether it is Uber, Airbnb, or Couchsurfing, trust is believed to be a crucial factor that impacts consumers' intentions in participating in these platforms (Mittendorf, 2016). Further analysis of past research also reveals that trust in the sharing economy is separately impacted by trust in the platform and trust in the corresponding participants (Mittendorf, 2017). Trust in corresponding users is a common topic because it is as simple as trust in other people in making business transactions. However, Mittendorf, 2017 found that consumers' intentions to request an Uber ride only depends on their trust in Uber as a platform, not their trust in Uber drivers. The fact that the trust in platform transcends the trust in drivers indicates that trust in the platform is the crucial constitute of consumers' trust in Uber. However, there is a deficit in research studies that analyze specifically consumers' trust in Uber as a platform. According to Murphy (2016), of the four kinds of sharing economy platforms, Uber is identified as the most formal platform that requires "building larger-scale infrastructure to create an ongoing sharing economy." Because Uber platform is built and facilitated by technology, to understand trust in Uber as a platform is to understand trust in the technology that provides that platform. Tripp (2016) suggests that our trust in technology depends on how "human" that technology is perceived to be. However, Tripp's research does not address trust in technology in the context of the sharing economy, where trust is the foundational aspect of it. Thus, this research aims to put more contexts into Tripp's findings about technology trust.

However, as discovered by previous research on Uber, trust in Uber drivers is transferred into trust in the platform and the technology itself (Mittendorf, 2017). Using this research result, if our trust in Uber is similar to our trust in self-driving cars, we would have trusted self-driving cars and the technology behind it. However, as past survey ((New York Times, 2017) indicated that people do not trust self-driving cars, our trust in the two technologies, Uber (the platform only) and self-driving cars might not be identical. The theory of technology humanness provides a potential interpretation: we perceive Uber as a human technology and self-driving cars as a nonhuman technology. This research aims at answering the question of whether consumers trust self-driving cars the same way we trust Uber as a platform in the context of the sharing economy.

Despite the variations in areas of studies, most of the current definitions of trust involves human interactions, meaning that trust in one way or another, allows for better human transactions. Trust, in modern days, is facilitated through the advancement of technology. However, it is also critical to acknowledge consumers' trust in technology and its influences on consumers' acceptance of various technologies such as online recommendation agents (Wang & Benbasat, 2005), business information systems (Lippert, 2007), e-commerce portals (Vance, Elie-Dit-Cosaque, & Straub, 2008), and knowledge management systems (Lankton, N., McKnight, D. H., Tripp, J., 2015). For a long time, researchers have used inconsistent constructs to measure trust in technology. However, Lankton et al. (2015) have provided a clearer distinction among trust constructs: trust constructs should be used depending on the "humanness" level of a technology. If a technology, for instance Facebook, is considered "human," human-like constructs (integrity, competence, benevolence) should be used to measure the trust. On the contrary, if a technology is not considered "human," system-like trust constructs (reliability, functionality, helpfulness) is more helpful to measure and explain technology trust.

Lankton et al. (2015) provide the foundation for this paper in terms of choosing which trust constructs to measure consumers' trust in Uber and in self-driving cars.

Human-like trusting beliefs	Corresponding system-like trusting beliefs
Integrity: the belief that a trustee adheres to a set of principles that the trustor finds acceptable	Reliability: the belief that the specific technology will consistently operate properly
Ability: the belief that the trustee has he group of skills, competencies, and characteristics that enable them to have influence within some specific domain Competence: the belief that the trustee has the ability to do what the trustor needs to have done	Functionality: the belief that the specific technology has the capacity, functions, or features to do for one what one needs to be done
Benevolence: the belief that the trustee will want to do good to the trustor, aside from an egocentric profit motive	Helpfulness: the belief that the specific technology provides adequate and responsive help for users

Table 1: Reproduced from Lankton et al. (2015)

3. Disposition to trust

Based on literature, disposition to trust is a personality construct with two components: faith in humanity and trusting stance (Kim, D. J., Ferrin, D. L., Rao, H. R. 2008). Personal faith in humanity assesses that other entities are usually upright, well-meaning, and dependable, whereas a trusting stance assesses the belief in superior outcomes when interacting with other

people (Gounaris, S. and Dimitriadis, S., 2003). In other words, disposition to trust is a psychological concept that assesses the tendency, based on a lifelong socialization process and personal development, to believe in the goodness of other individuals and to ultimately trust others.

Disposition to trust is believed to be highly important when individuals are still unfamiliar with each other – the primary state between individuals in the sharing economy (Kim et al., 2008) (Mittendorf, 2017). Disposition to trust serves as an antecedent of trust (Gefen, 2000). Thus, with the absence of prior direct experience, disposition to trust is highly effective in the initiation phase of an interaction, which is present in the sharing economy (Gefen, 2000). As a result, disposition to trust is especially valuable in a one-time interaction framework (Mittendorf, 2017).

4. Perceived risk

Nicolaou and McKnight (2006) define perceived risk as a specific kind of uncertainty a user perceives, providing a window on the degree of uncertainty the system user feels in the situation. Using the definition above, combined with that of Wyuu et. al (2010), Mittendorf (2017) interprets perceived risk as a consumer's belief about the potential negative outcomes from online and offline interactions with providers. Perceived risk is an important construct in the sharing economy, as the sharing economy involves certain levels of uncertainty in its core functionality: connecting strangers to share resources in exchange for monetary values. Past research by Mittendorf (2017) suggests that perceived risks of the corresponding participants play an important role in determining accommodation providers' trust in accommodation-sharing platforms such as Airbnb and Couchsurfing. However, there is no research on perceived risks of the corresponding participants from the consumers' standpoint. Thus, this research aims to fill in

the gap by analyzing the impact of consumers' perceived risks in Uber and self-driving cars on their trusting intentions in the two technologies

5. Familiarity with the platform

While trust aims at future transaction, familiarity is built from past experiences. Thus, familiarity is the precondition for trust, as it allows individuals to clarify expectations for future transactions (Mittendolf, 2017). In the context of Uber, familiarity involves familiarity with Uber as the platform and with Uber drivers. Familiarity with Uber is created from past Uber ride requests through the mobile application, while familiarity with specific Uber drivers is limited. Thus, familiarity with Uber, in this research, primarily refers to familiarity with the platform itself.

Using this definition, familiarity with self-driving cars is also limited because the technology is not publicly used in the market yet. Thus, familiarity with self-driving cars is predominantly based on individuals' exposures to articles and news about this technology.

6. Self-driving cars

Self-driving cars are no longer a new concept to consumers, as they are a popular topic in both academic and business journals. There have been numerous partnerships, mergers, and acquisitions made to foster the development of this new technology. Despite the significant amount of investments made in the autonomous driving industry by giants like Alphabet, General Motors, and Tesla, "the Pew Research Center found that most people surveyed did not want to ride in them and were not sure whether the vehicles would make roads safer or more dangerous (39 percent vs. 30 percent). 87 percent favored requiring that a person always be behind the wheel, ready to take control if something goes wrong." (New York Times, 2017). In other words, consumers are not ready to trust self-driving cars and this new technology without

the intervention of human beings. Due to the newness of self-driving car, or driverless car, there exists little research on this technology. As of November 4, 2017, investments into self-driving car companies are valued at roughly $1.4 billion, more than double 2016 levels ($630 million) (Glasner, J., 2017). Intel's recent $15.3 billion purchase of Mobileye, an Israel-based startup, is considered the largest M&A deal for an autonomous driving-related company for this or any year (Glasner, J., 2017).

RESEARCH METHODS & RESULTS

Theoretical Backgrounds

This study primarily combines the work of Mittendorf (2017) about the sharing economy and its major players Uber and Airbnb and the work of Lankton et. al (2015) about technology trusts as the foundation for the collection and analysis of data. Mittendorf (2017) concludes the key trust constructs that significantly impact consumers' intention in participating in Uber are: disposition to trust, familiarity with the platform, perceived risk of platform. These constructs will be used in the survey to measure consumer's intentions in the sharing economy. As Mittendorf (2017) suggests, it is important to distinguish between the consumer's trust in Uber (as a platform) and their trust in Uber drivers, and only the trust in Uber as a platform impacts consumers' intention to participate in Uber. This finding suggests the importance of understanding consumers trust in Uber as a platform and how technology allows for this creation of trust. Lankton et. al (2015) shows that we do trust technology, and that our trust in technology differs based on the perceived "humanness" of that technology. If a technology is more "human," human-like trust constructs are used to measure our trust in that technology. On the contrary, system-like trust constructs should be used for a technology that would be perceived less "human". For instance, the research uses the example of Excel as a less human and Facebook as a more human technology. Using

Lankton et. al (2015) as a foundation, this paper assumes that Uber is considered human and self-driving cars are not considered human. The paper uses human-like and system-like trust constructs for both Uber and self-driving cars in the creation of research models to test consumers' perception of the two technologies' humanness. Figures 1 and 2 is a visual representation of the research models used in this paper.

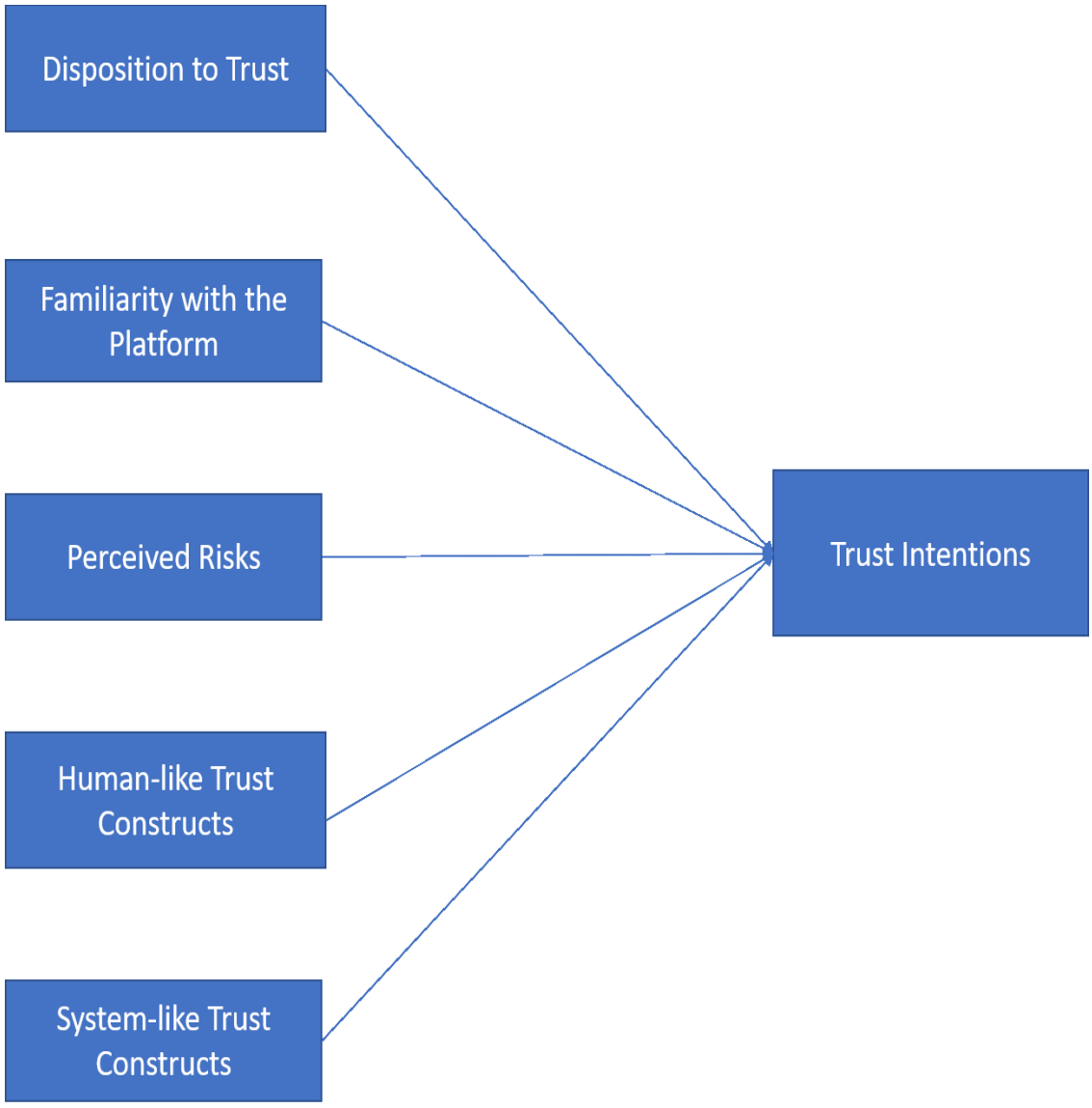

Figure 1: Research model for Uber and self-driving cars

Research Hypothesis

In order to examine consumers' trust in Uber and self-driving cars in the sharing economy, hypotheses were formulated. The study will test the hypotheses listed below.

H1. Stronger disposition to trust will lead consumers to trust Uber more.

Even though trusts in a technology in an online environment can depend on several variables, in general, people with higher disposition to trust tend to have more positive initial interactions with unknown, unfamiliar counterparts (Wu G. et. al, 2010). Mittendorf in past research has suggested that the stronger the customers' disposition to trust is, the more they will trust in Uber. This hypothesis will be tested again with the millennial population at Texas Christian University to ensure validity.

H2. Increased familiarity with the platform will increase consumers' intention to trust Uber.

Familiarity is the ownership of previous learned interactions with certain counterparts. Familiarity reduced complexity and risks when using a technology because the users will mostly be aware of certain risks and functionality of a technology. In this regard, familiarity with Uber can be indicated by whether consumers have used the Uber application before. Mittendorf in past research has suggested that familiarity with Uber will positively impact consumers' trust in the platform. This hypothesis will be tested again with the millennial population at Texas Christian University to ensure validity.

H3. Perceived risk of Uber impacts consumers' intention to trust Uber.

Perceived risk is a consumer's belief about the uncertainty involved in a certain situation and its potential negative outcomes (Nicolaou, 2006). This research aims at analyzing whether a consumer's belief of risks will impact his or her trusting intention in Uber. Research by Lee et. al (2017) identifies some specific concerns that affect users' use of a ride-sharing service, such as

safety, security, surcharge justification (fair pricing calculations). This paper aims to generalize perceive risk as a trust construct and to analyze its influence's on consumers' trusts in Uber.

H4. Human-like trust constructs (integrity, ability, benevolence) impact consumers' intention to trust Uber.

Lankton et. al (2015) found that our trusts in technology differ based on our perception of a technology's humanness, and in the case of their research, Facebook is considered "human-like" by users, whereas Excel is considered system-like. This research tests whether human-like constructs will impact respondents' trusts more than system-like constructs, which will suggest how "human" respondents felt each technology (Uber and self-driving cars) is. Specifically, the research will test the hypothesis that Uber is considered more human-like, and thus human-like constructs will have stronger influence on respondents' trust in this technology.

H5. System-like trust constructs (reliability, functionality, helpfulness) do not significantly impact consumers' intention to trust Uber.

If Uber is considered more human-like, system-like trust constructs will not have an influence as strong as human-like constructs on respondents' trust. This hypothesis is to complement H4.

H6. Stronger disposition to trust will lead consumers to trust self-driving cars more.

Disposition to trust has been proven to influence consumers' trusts in several technologies in the economy: Uber, Airbnb, Couchsurfing. This research aims to test whether disposition to trust will have similar effect on consumers' trust in self-driving cars.

H7. Familiarity with the platform impacts consumers' intention to trust self-driving cars.

As mentioned earlier, familiarity is the ownership of previous learned interactions with certain counterparts. In the case of self-driving cars, familiarity is an interesting construct to

analyze because of the technology's tremendously high costs and its lack of invisibility and accessibility in the market. Thus, familiarity with self-driving cars is mostly determined by consumers' exposure to news articles about the technology. Using the foundation of past research that suggests that familiarity does impact consumers' trust in a technology, this research aims to analyze whether familiarity (or unfamiliarity) will impact consumers' trusting intentions in self-driving cars.

H8. Perceived risk of self-driving cars impact consumers' intention to trust self-driving cars.

As perceived risk is a consumer's belief in the uncertainty of a situation, it is an important factor in measuring consumers' trust in self-driving cars. Due to the limited amount of research on self-driving cars or limited access to the technology itself, most Millennial consumers will have minimal previous interactions with self-driving cars. Because self-driving cars will fundamentally change the current perception of driving and the current car manufacturing standards, it involves a high level of uncertainty. As participants in a survey by the Pew Center voiced their safety concerns regarding self-driving cars, a potential interpretation can be that perceived risks of self-driving cars will impact consumers' trust in this technology. This research aims to test this hypothesis.

H9. Human-like trust constructs (integrity, ability, benevolence) do not significantly impact consumers' intention to trust self-driving cars.

Consumers' perceptions of a technology's humanness is an important factor in measuring consumers' trust in that technology. Due to the lack of previous academic research on self-driving cars, it is unknown whether consumers will perceive self-driving cars as more human-like or system-like. However, considering that self-driving cars will involve minimal human

interactions through the elimination of human drivers, this paper hypothesize that self-driving cars will be considered more system-like by consumers. Thus, the research will test whether human-like trust constructs will have stronger influence on consumers' trusts in self-driving cars.

H10. System-like trust constructs (reliability, functionality, helpfulness) impact consumers' intention to trust self-driving cars.

To further validate whether self-driving cars will be considered more system-like by consumers, the research will test whether human-like trust constructs will have stronger influence on consumers' trusts in self-driving cars.

Methodology

This study will survey Texas Christian University students, representative of Millennial consumers, about their trusting beliefs in Uber and self-driving cars in the context of the sharing economy. The survey will be digitally distributed via emails only to students to ensure the identity of the participants. The survey will be conducted via Qualtrics. A copy of the survey questions is included in the Appendix.

Data will be collected from a sample of approximately 200 students attending Texas Christian University of different genders, majors, and classifications. The participants are friends and colleagues of the researcher. The survey is limited to only Texas Christian University students because students are representative of Millennial consumers in the United States.

The survey is to measure participants' attitudes and intentions in using Uber and self-driving cars. The survey employs different trust constructs that have been validated in previous work by other researchers. Participants are asked to score each statement using Linkert 7-point scale. Specifically, the survey used Mittendorf (2017)'s work for statements on disposition to trust, familiarity with the platform, and intention to trust the platform, Nicolaou and McKnight

(2006)'s research for statements on perceived risk, and Lankton, McKnight, and Tripp (2015)'s research for statements on human-like and system-like trust constructs. However, these statements were also amended to fit the research purpose of this study. A structural map of the survey is included in the figure below.

The emails will include a mandatory consent form, a brief description that explains the purpose of the survey, and a Qualtrics URL to the survey itself. The survey will include 69 questions and would take no more than 20 minutes to complete.

The survey will be pilot-tested prior to official administration. Data will be collected at the end of January to mid-February 2017.

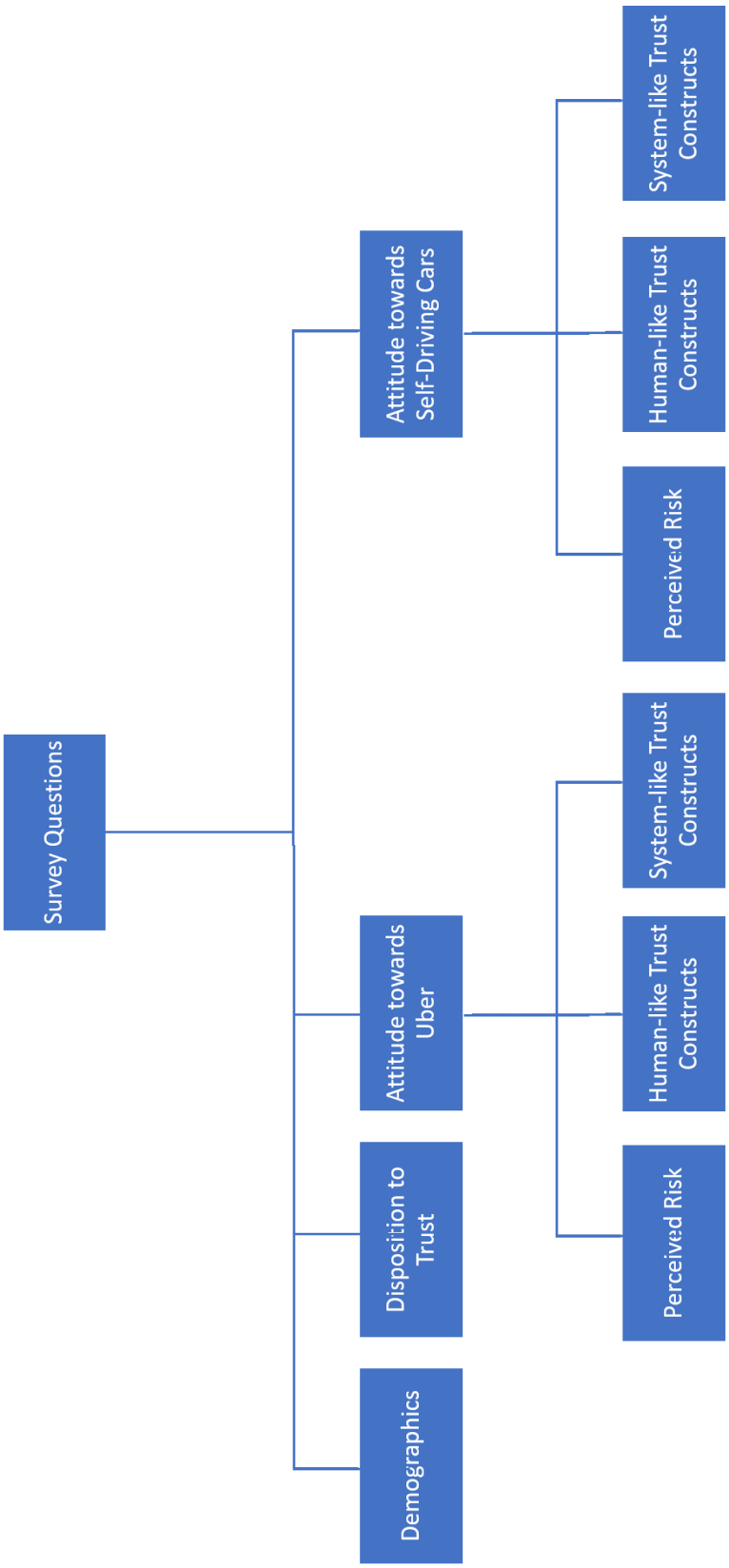

Figure 2: Survey model

ANALYSIS

The survey was conducted in 3 weeks in February 2018. The questionnaire was distributed to Business Information Systems (BIS) students at Texas Christian University via email and personal administration. 240 complete data sets were collected.

The survey data was collected and reviewed for incomplete responses. After data cleanup, 240 responses were analyzed to draw conclusions regarding the hypotheses.

Demographic data

The survey includes three demographic questions that gather participants' age, gender, and their enrolled BIS classes. The participants were mostly 18-20 years old (n = 214). About 43% (n = 103) of the participants were female, and 57% (n = 137) were male. All participants were students at Texas Christian University, with 93.3% (n = 224) are enrolled in sophomore BIS classes and 5.8% (n = 14) in upper-level BIS classes.

Methodology

The statistical analysis was conducted using IBM SPSS and IBM Amos 25. IBM SPSS was used to test for Cronbach's Alpha and multivariate linear regression. IBM Amos was used to perform common bias analysis and structural equation modeling.

Cronbach's Alpha

The data model demonstrates adequate validity and reliability with Cronbach's Alpha (CA) being in an acceptable range. One notable finding was that the CA of Perceived risk in the Uber data model is .592, which is below an acceptable level. However, CA of Perceived risk in the self-driving car model (.720) is acceptable, which indicates a certain level of reliability within

this data group. Thus, with most variables' CAs exceeding the acceptable range, the data sets are considered to be valid and adequate to support statistical analysis.

Variable	Cronbach's Alpha (For Uber)	Cronbach's Alpha (For self-driving cars)
Disposition to trust	.857	.857
Familiarity	.843	.896
Perceived Risk	.592	.720
Integrity	.893	.947
Competence	.890	.961
Benevolence	.860	.880
Reliability	.813	.910
Functionality	.912	.949
Helpfulness	.848	.941
Trusting intentions	.923	.975

Table 2: Cronbach's Alpha for all subgroups

Common Method Bias

Common method bias was performed using IBM Amos to confirm the validity of data sets. This method allows for the identification of a common factor that can potentially influence all constructs in the data sets. Two models, one for Uber and one for self-driving cars were tested for common method bias. Model fit was analyzed to ensure that the models with a common factor were not good indicators of the relationships among constructs. Uber model, with RMSEA .070 and NFI .832, indicates a poor model fit. Similarly, self-driving car model, retrieves a poor model fit. This method confirms the validity of the collected data sets and their subgroups.

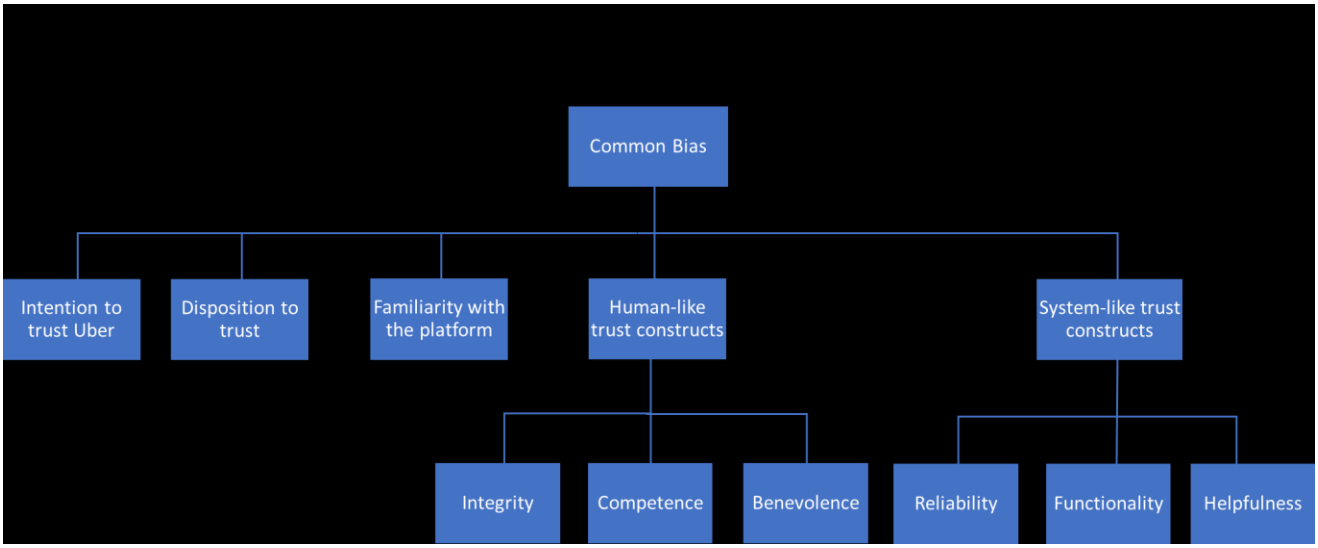

Figure 3: Common bias model for Uber

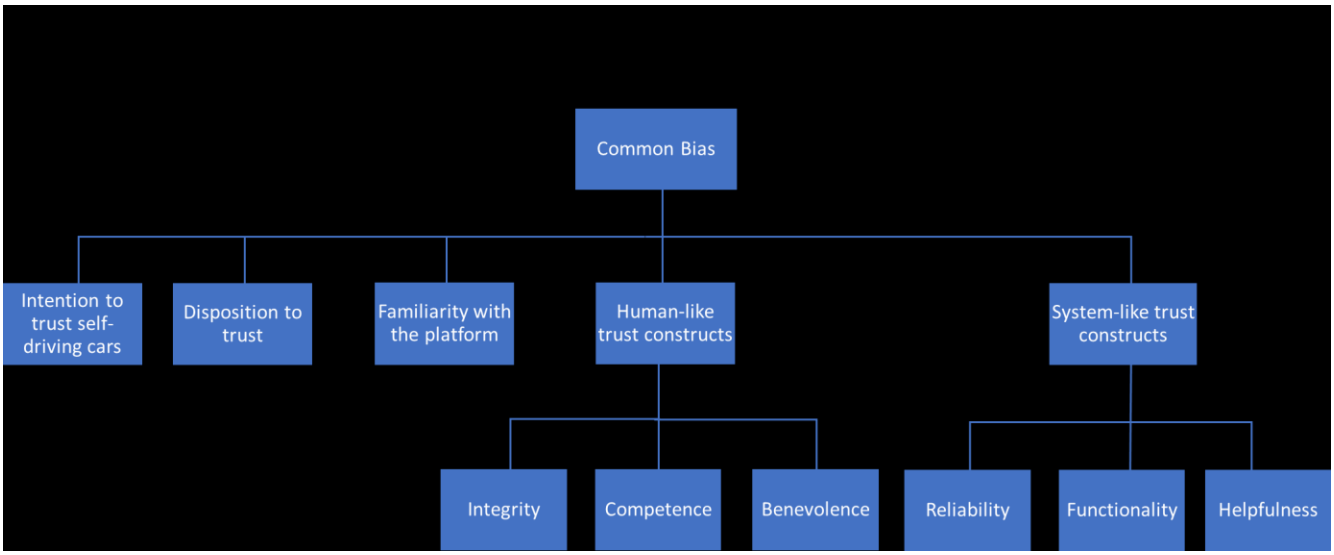

Figure 4: Common bias model for self-driving cars

Multivariate Linear Regression

1. *Uber*

Stepwise multivariate linear regression method was used to identify the best model fit using available variables. Adjusted R squared > 0.3 is acceptable. Highest adjusted R Squared indicates

that in the most well-fitted model, trusting intentions in Uber is dependent on four variables: perceived risks, system-like trust constructs, familiarity with the platform, and age. However, by including variable age, adjusted R square only increased by .02, which is not significant. The exclusion of disposition to trust from the model means that stronger disposition to trust will not lead consumers to trust Uber more, disproving H1. The exclusion of human-like trust constructs suggests that human-like trust constructs (integrity, ability, benevolence) will impact consumers' intention to trust Uber, disproving H4.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.583[a]	.340	.337	.7645693362
2	.679[b]	.462	.457	.6920871097
3	.716[c]	.513	.507	.6595794590
4	.733[d]	.537	.529	.6443108822

a. Predictors: (Constant), Risk AVG

b. Predictors: (Constant), Risk AVG, System AVG

c. Predictors: (Constant), Risk AVG, System AVG, Fam AVG

d. Predictors: (Constant), Risk AVG, System AVG, Fam AVG, Age

Table 3: Model summary for Uber

Collinearity statistics is studied to ensure the validity of independence between trust variables within the data set and to eliminate multicollinearity concerns. Variance inflation factors ranged from 1.11 to 1.359, which are less than the recommended maximum value of 4.0. (Fisher & Mason, 1981)

	Collinearity Statistics (VIF)

Risk AVG	1.359
System AVG	1.367
Familiarity AVG	1.383
Age	1.110

Table 4: Multicollinearity for Uber model

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics
		B	Std. Error	Beta	t	Sig.	Tolerance
1	(Constant)	2.434	.334		7.293	.000	
	Risk AVG	.666	.060	.583	11.077	.000	1.000
2	(Constant)	1.079	.354		3.045	.003	
	Risk AVG	.466	.061	.407	7.632	.000	.797
	System AVG	.470	.064	.390	7.312	.000	.797
3	(Constant)	.183	.382		.478	.633	
	Risk AVG	.382	.060	.334	6.314	.000	.736
	System AVG	.382	.064	.317	5.990	.000	.736
	Fam AVG	.291	.058	.259	4.994	.000	.768
4	(Constant)	.804	.413		1.945	.053	
	Risk AVG	.383	.059	.335	6.473	.000	.736
	System AVG	.364	.062	.303	5.833	.000	.731
	Fam AVG	.241	.059	.215	4.112	.000	.723
	Age	-.078	.022	-.164	-3.510	.001	.901

Table 5: Attitude towards Uber

Table N shows the coefficients between the four significant variables and consumers' trusting intentions in Uber. Coefficients of .335 at the .000 significance level shows that perceived risks of Uber will lead consumemrs to trust Uber and thus confirms H3. Coefficient of .303 at the .000

significance level shows that system-like trust constructs (reliability, fuctionality, helpfulness) do significantly impact consumers' intention to trust Uber and thus disproves H5. Coefficient of .215 at the .000 significance level shows that increased familiarity with the platform will increase consumers' intentions to trust Uber, confirming H2.

2. *Self-driving cars*

Similarly, stepwise multivariate linear regression method was used to identify the best model fit using available variables for self-driving cars. The highest adjusted R squared of .565 indicates that in the most well-fitted model, trusting intentions in Uber is dependent on three variables: perceived risks, system-like trust constructs, and gender. However, the inclusion of variable gender only increases adjusted R square by .015, which is not significant. The exclusion of disposition to trust indicates that stronger disposition to trust will not lead consumers to trust self-driving cars more and thus disproves H6. The exclusion of familiarity with the platform from the model suggests that familiarity with the platform does impact consumers' intention to trust self-driving cars, disproving H7. The exclusion of human-like trust constructs from the model means that and that human-like trust constructs (integrity, ability, benevolence) do not impact consumers' intention to trust self-driving cars, disproving H9.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.707[a]	.500	.498	1.203964270
2	.744[b]	.554	.550	1.139572713
3	.755[c]	.571	.565	1.120310206

a. Predictors: (Constant), System AVG 1

b. Predictors: (Constant), System AVG 1, Risk AVG 1

c. Predictors: (Constant), System AVG 1, Risk AVG 1, Gender

Table 6: Model summary for self-driving cars

Multicollinearity is not a concern for the self-driving car model as Variance inflation factors ranged from 1.008 to 1.751, which are less than the recommended maximum value of 4.0. (Fisher et. Al, 1981)

	Collinearity Statistics (VIF)
System AVG	1.751
Risk AVG	1.762
Gender	1.008

Table 7: Multicollinearity for self-driving cars model

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.761	.336		-2.266	.024
	System AVG 1	1.440	.093	.707	15.426	.000
2	(Constant)	-1.170	.327		-3.577	.000
	System AVG 1	1.031	.117	.506	8.822	.000
	Risk AVG 1	.411	.077	.307	5.353	.000
3	(Constant)	-1.827	.388		-4.714	.000
	System AVG 1	1.044	.115	.513	9.083	.000
	Risk AVG 1	.392	.076	.292	5.162	.000
	Gender	.445	.147	.130	3.036	.003

Table 8: Attitude towards self-driving cars

Table N shows the coefficients between the three variables and consumers' trusting intentions in self-driving cars. Coefficients of .292 at the .000 significance level shows that perceived risks of self-driving cars will lead consumers to trust self-driving cars and thus confirms H8. Coefficient of .513 at the .000 significance level shows that system-like trust constructs (reliability, fuctionality, helpfulness) do significantly impact consumers' intention to trust self-driving cars and thus confirms H10.

DISCUSSION

Below is the summary of the results:

H1. Stronger disposition to trust will lead consumers to trust Uber more. **Disproved**

H2. Increased familiarity with the platform will increase consumers' intention to trust Uber. **Confirmed**

H3. Perceived risk of Uber impacts consumers' intention to trust Uber. **Confirmed**

H4. Human-like trust constructs (integrity, ability, benevolence) impact consumers' intention to trust Uber. **Disproved**

H5. System-like trust constructs (reliability, functionality, helpfulness) do not significantly impact consumers' intention to trust Uber. **Disproved**

H6. Stronger disposition to trust will lead consumers to trust self-driving cars more. **Disproved**

H7. Familiarity with the platform impacts consumers' intention to trust self-driving cars. **Disproved**

H8. Perceived risk of self-driving cars impact consumers' intention to trust self-driving cars. **Confirmed**

H9. Human-like trust constructs (integrity, ability, benevolence) do not significantly impact consumers' intention to trust self-driving cars. **Confirmed**

H10. System-like trust constructs (reliability, functionality, helpfulness) impact consumers' intention to trust self-driving cars. **Confirmed**

The results suggest factors that play into determining consumers' trust in Uber and self-driving cars. Disposition to trust which measures human's natural tendency to trust someone, does not determine consumers' trust in Uber, which is different from past research results and will not determine consumers' trust in self-driving cars. A possible interpretation of this result is that because there are no significant differences in the demographics of survey participants, respondents' disposition to trust levels are similar. Similar disposition to trust levels makes it hard to determine whether this factor has a correlation with consumers' trust. Familiarity with the platform only impacts consumers' intentions to trust Uber, which confirms with past research results. However, familiarity with the platform does not impact consumers' intentions to trust self-driving cars. A potential interpretation is that because consumers are not familiar with the new technology itself, and thus, familiarity with the technology does not determine consumers' trusting intentions. The research also shows that perceived risks is an important factor that impacts consumers' trusting intention in both Uber and self-driving cars. Statistical results also suggest that only system-like trust constructs, not human-like trust constructs, impact consumers' trust in both Uber and self-driving cars. This finding suggests that consumers view Uber and self-driving cars as low humanness technologies. In summary, there are common factors that impact consumers' trusting intentions in both technologies (perceived risks, system-like trust constructs) and familiarity is the factor that distinguish their trusts.

LIMITATION

The first limitation is the survey sample for the study. The study is limited to only TCU students who share similar demographics, educational level and potentially disposition to trust level. This sample might not be representative of the broader population of young customers, which leads to findings that contradict past research studies. The second limitation is the research methodology itself. The research aims to model after and expand past research studies on technology trust and trust in the sharing economy, which used Structural equation modeling to test their data sets. However, Structural equation modeling is out of this project's scope, and thus, multivariate linear regression is used as the alternative methodology. In order to strengthen the findings from multivariate linear regression, common bias was also performed to confirm the validity of data collected. Another notable limitation of the research is the granularity of the research findings. The research suggests that consumers' intentions to trust Uber and self-driving cars depend on perceived risks and system-like trust constructs. However, it does not address potential methods that measure perceived risks and system-like trust constructs. Understanding the impact of system-like trust constructs is important in understanding consumers' trust in both technologies, yet the research does not address which factors of system-like trust constructs (reliability, functionality, helpfulness) is more significant in shaping consumers' trusts.

IMPLICATION

For individual consumers:

The project underscores the increasing importance of trust in economic activities, especially in the sharing economy environment. Past researchers have recognized the evolution of consumers' trust in the economy: consumers have trusted big institutions, such as government agencies or financial banks and have grown to trust strangers in the online environment. This research further confirms that consumers are now trusting technologies themselves, which results

to the rapid development of disruptive technologies that will change how consumers lead their lives and how businesses conduct their operations. Increased trust in technologies suggests that certain human activities or jobs will be replaced by technologies to improve transparency and eliminate human errors. For instance, the introduction of self-driving cars will significantly reduce demands for human drivers. Thus, consumers need to beware of this trend to equip themselves with certain skill sets to adapt to the changing business environment.

For business leaders:

Understanding the constitution of consumers' trust allows business leaders to have a more customer-focused view in creating products and marketing strategies. Specifically, in the case of self-driving cars manufacturing companies, business leaders are now aware of factors that prevent potential customers from adopting this new technology. By understanding that perceived risks and system-like trust constructs are critical in determining whether a consumer trust a self-driving car, self-driving car manufacturers, or Uber can improve their technology accordingly. For instance, self-driving car manufacturers should examine system-like trust constructs, which consist of reliability, functionality, and helpfulness and design the new technology to address the three criteria. Another practical implication is that it provides Uber and self-driving car manufacturers with an informed foundation for marketing strategies. For instance, the recent accident of a self-driving Uber killing the first pedestrian on March 18, 2018 is likely to have increased perceived risks of self-driving cars to potential customers. Thus, Uber and self-driving cars advocates should release marketing campaigns that address potential risks of this technology and the reliability, functionality, and helpfulness of self-driving cars to promote system-like trusts in consumers. Historically, the campaign *Never a Stranger* increased Airbnb's brand awareness by 7%, web-traffic in heavily-advertised cities by 16%, and more

important, addressed the issue of trusts in this new platform. Uber and self-driving car manufacturers need to take initiative to address the issues of trust in potential customers in the development and rolling out of this new technology.

FUTURE RESEARCH

An important finding of this research is the impact of familiarity in determining consumers' trust in Uber, not in self-driving cars. Further research should be conducted to determine the reason for this finding, whether it is because consumers are not familiar with self-driving cars at all or there is a significant difference between the two technologies Uber and self-driving cars. Another area of study is to explore system-like trust constructs' impact on technologies trust. This paper identifies aggregate system-like trust constructs as one variable. However, the three criteria of system-like trust constructs (reliability, helpfulness, functionality) might impact consumers' trust differently. A limitation of this project is the research methodology: multivariate linear regression was performed in replacement of structural equation modeling. Further research can test the hypotheses of this paper using structural equation modeling to confirm test results.

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APPENDIX

Section 1: Demographics

1. How old are you? – Drop-down menu with options from 18-60
2. What's your gender? Male Female
3. What class are you currently enrolled in?

Section 2: Disposition to Trust

4. I generally trust other people.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

5. I generally have faith in humanity.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

6. I generally trust other people unless they give me reason not to.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

7. I feel that people are generally reliable.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

8. I tend to count upon other people.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

Section 3: Attitude towards Uber

Section 3.1: Familiarity with Uber

9. I am familiar with using Uber.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

10. I am familiar with the interface of Uber.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

11. I am familiar with Uber.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

12. I am familiar with the intentions of Uber.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

13. I am familiar with the services Uber provides.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

Section 3.2: Perceived risk

14. How would you rate the overall risk of requesting and riding with Uber?

1 – Extremely Low 2 – Low 3 – Moderately Low 4 – Neutral

5 – Slightly High 6 – High 7 – Extremely High

15. How would you characterize the possibility of using the mobile application offered by Uber to request and ride with Uber?

1 – Significant threat 2 – Threat 3 – Moderate Threat 4 – Neutral

5 – Moderate Opportunity 6 – Opportunity 7 – Significant opportunity

16. How would you characterize the possibility of using Uber to request a ride?

1 – High Potential for Loss 2 –Potential for Loss 3 – Moderate Potential for Loss 4 – Neutral

5 – Moderate Potential for Gain 6 – Potential for Gain 7 – High Potential for Gain

Section 3.3: Human-like trust constructs

Section 3.3.1: Integrity

17. Uber is truthful in its dealings with me.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree

5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

18. Uber is honest.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat

Agree 6 – Agree 7 – Strongly Agree

19. Uber keeps its commitments.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat

Agree 6 – Agree 7 – Strongly Agree

Section 3.3.2: Competence

20. Uber is competent and effective in providing on-demand rides.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat

Agree 6 – Agree 7 – Strongly Agree

21. Uber performs its role of ride-sharing provider very well.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat

Agree 6 – Agree 7 – Strongly Agree

22. Uber is a capable and proficient ride-sharing provider.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat

Agree 6 – Agree 7 – Strongly Agree

Section 3.3.3: Benevolence

23. Uber acts in my best interest.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat

Agree 6 – Agree 7 – Strongly Agree

24. Uber does its best to help me if I need help.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat

Agree 6 – Agree 7 – Strongly Agree

25. Uber is interested in my well-being, not just its own.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat

Agree 6 – Agree 7 – Strongly Agree

Section 3.4: System-like Trust Constructs

Section 3.4.1: Reliability

26. Uber is a very reliable technology.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

27. Uber will not fail me.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

28. Uber is extremely dependable.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

Section 3.4.2: Functionality

29. Uber provides the functionality I need.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

30. Uber has the features required for my tasks.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

31. Uber has the ability to do what I want it to do.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

Section 3.4.3: Helpfulness

32. Uber supplies my need for help through a help function.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

33. Uber provides competent guidance (as needed) through a help function.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

34. Uber provides whatever help I need.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

Section 3.5 Intention to request a ride

35. I would feel comfortable requesting a ride on Uber.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

36. I am very likely to request a booking on Uber in the future.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

37. I would request a ride on Uber in general.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

38. I would not hesitate to request a ride on Uber.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

39. I would use Uber to request a ride to a specific location.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

Section 4: Attitude towards self-driving cars

Section 4.1: Familiarity with the platform

40. I am familiar with using self-driving cars.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

41. I am familiar with the interface of self-driving cars.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

42. I am familiar with self-driving cars.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

43. I am familiar with the intentions of self-driving cars.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

44. I am familiar with the services self-driving cars provide.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

Section 4.2: Perceived risk

45. How would you rate the overall risk of using self-driving cars?

1 – Extremely Low 2 – Low 3 – Moderately Low 4 – Neutral

5 – Slightly High 6 – High 7 – Extremely High

46. How would you characterize the possibility of using self-driving cars?

1 – Significant threat 2 – Threat 3 – Moderate Threat 4 – Neutral

5 – Moderate Opportunity 6 – Opportunity 7 – Significant opportunity

47. How would you characterize the possibility of using self-driving cars?

1 – High Potential for Loss 2 –Potential for Loss 3 – Moderate Potential for Loss 4 – Neutral

5 – Moderate Potential for Gain 6 – Potential for Gain 7 – High Potential for Gain

Section 4.3: Human-like trust constructs

Section 4.3.1: Integrity

48. Self-driving cars will be truthful in their dealings with me.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree

5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

49. Self-driving cars will be honest.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

50. Self-driving cars will keep their commitments.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

Section 4.3.2: Competence

51. Self-driving cars will be competent and effective in providing rides.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

52. Self-driving cars will perform their role of transportation vehicles very well.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

53. Self-driving cars will be capable and proficient transportation vehicle.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

Section 4.3.3: Benevolence

54. Self-driving cars will act in my best interest.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

55. Self-driving cars will do their best to help me if I need help.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

56. Self-driving cars will be interested in my well-being, not just its own.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

Section 4.4: System-like trust constructs

Section 4.4.1: Reliability

57. Self-driving cars will be a very reliable technology.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

58. Self-driving cars will not fail me.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

59. Self-driving cars will be extremely dependable.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

Section 4.4.2: Functionality

60. Self-driving cars will provide the functionality I need.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

61. Self-driving cars will have the features required for my tasks.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

62. Self-driving cars will have the ability to do what I want it to do.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

Section 4.4.3: Helpfulness

63. Self-driving cars will supply my need for help through a help function.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

64. Self-driving cars will provide competent guidance (as needed) through a help function

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

65. Self-driving cars will provide whatever help I need.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

Section 4.5: Intention to request a ride

66. I would feel comfortable using a self-driving car or requesting a self-driving Uber ride.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

67. I am very likely to request a self-driving Uber ride or use a self-driving car in the future.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

68. I would request a self-driving Uber ride or use a self-driving car in general.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

69. I would not hesitate to request a self-driving ride on Uber or use a self-driving car.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree

70. I would use Uber to request a self-driving ride or use a self-driving car to a specific location.

1 – Strongly Disagree 2 – Disagree 3 – Somewhat Disagree 4 – Neither agree or disagree 5 – Somewhat Agree 6 – Agree 7 – Strongly Agree