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MSc Thesis

The influence of start-ups and type of innovations on
willingness to pay and willingness to test.

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Abstract

There are many factors that come to mind when thinking about the decisions a company makes when introducing a product innovation to the market. In prior work, there has been a great amount of research, which centers around how brands influence the customers' decision-making process. Focusing on what the type of company effects in this process, has not been considered as directly. Certain innovations might prove to elicit more demand in the market under a different kind of company. This paper tries to give insight into this matter in the way of looking for the scope of influence of start-ups and the type of innovation on willingness to pay (WTP) and willingness to test (WTT).

This paper describes an experiment that elicits responses based on the description of a company, being either a start-up or an established company. Two versions of questionnaires in this experiment, display a start-up introducing two types of innovations, and two, present an established company, doing the aforementioned. These companies introduce either an incremental or radical product per questionnaire. These incremental and radical products are described as the same product. Hence, they are merely labeled as incremental or radical to moderate response. The results show a difference in willingness to pay in favor of an established company. For willingness to test, a start-up comes out on top. In the area of the type of innovations, radical product introductions give a greater reaction in terms of willingness to pay, whereas incremental product introductions conclude a higher willingness to test. The effects of being a start-up and the type of innovation prove not to be significant, albeit present. It would be worthy, to further research this experiment on a larger sample size and one with more diversity in nationalities.

After analyzing the results, it is noteworthy to mention that a radical product elicits a greater willingness to pay when introduced by a start-up. Incremental innovations see a higher willingness to pay value when introduced by an established company. Regarding willingness to test, these results are reversed. This paper also aims to place these findings in the context of business and marketing. These managerial implications and further research recommendations are proposed conjointly in this study in order to further research the applicability of this theory and findings.

1. Introduction

“Because the purpose of a business is to create a customer, the business enterprise has two – and only two – basic functions: marketing and innovation.”

Peter Drucker

The innovative capabilities of a company are vital to a business. These capabilities result in acquiring new customers¹ and elicit customer loyalty. All innovations fall or stand by the adoption of a product or service by the consumer. A consumer² focused view on innovation is, therefore, key. The consumers' perception of a firms' capability to produce novel, creative and impactful ideas and solutions is called perceived firm innovativeness (PFI) (Kunz, Schmitt, & Meyer, 2011). PFI accounts for much more than merely the perception which a consumer has about a certain product which a company puts on the market. It is a view of the range of company activities to get a judgment of a firm's overall innovativeness. A recent study in 2011 by Kunz, Schmitt and Meyer, focusses on how PFI affects consumer loyalty. This study elaborates on its functional-cognitive and its affective-experimental influences to a customer, by focusing on the perceived innovativeness of a company. This research makes an effort to apprehend how the type of company that is being researched, has an effect on how innovative a company is perceived, and whether that translates into a higher willingness to pay and willingness to test.

At the time of writing, start-ups are monopolizing the term innovation (Ries, 2011) and almost every university, city and country have worked or works together with a start-up center where new enterprises get support to create their own start-up. The Netherlands, in particular, tries to profile itself as a so-called “Start-up Delta” (Ministry of Economic Affairs, 2015) to “connect and accelerate the West Coast of Europe”. Students get offered guest lectures on how to foster a start-up and many more start-ups are coming into existence recently. These companies also do not shy away from the fact that they started as one and use the term start-up in abundance.

A matter of importance is; when people hear the word start-up, they easily associate that with innovation and these two terms go hand in hand in publications and events (Carson, 2016).

^{1, 2}The terms “customer” and “consumer” are used interchangeably in this paper.

The theoretical contribution of this thesis lies in establishing the role of the term “start-up” and radical innovation on willingness to pay and willingness to test. A constructed framework will guide the reader in how the independent variables relate to one another. The managerial contribution comes in the form of direction. A direction to know under what kind of company, a certain type of innovation might thrive better, thinking of willingness to pay and willingness to test. In what matter does it change the customers’ image of your company? Expected, is that using the term start-up, can be beneficial in situations where there is an incremental innovation over an existing product or service, but when it comes to radical innovations, the innovation is better to derive from an established company, one that has built up a reputation over the years as being an efficient and reliable company.

In this paper, the reader will be first exposed to the conceptual model and the theoretical framework of this research which will envision the how the different variables connect. After this, the hypotheses are presented, creating an overview of the experiment and the relationships between the key variables. This is followed by the methodology, letting the reader in on how the experiment took place and what analysis was involved. Inevitably, followed by the results and discussion.

2. Theory and hypotheses

2.1 Conceptual model

In the conceptual model, shown in figure 1, the structure of this experiment takes shape and all hypotheses are inserted to get an overview of how the constructs hold together. It also shows clearly which attributes work as a moderator and which as a mediator. The key dependents that are being researched are WTP and WTT.

Company level properties

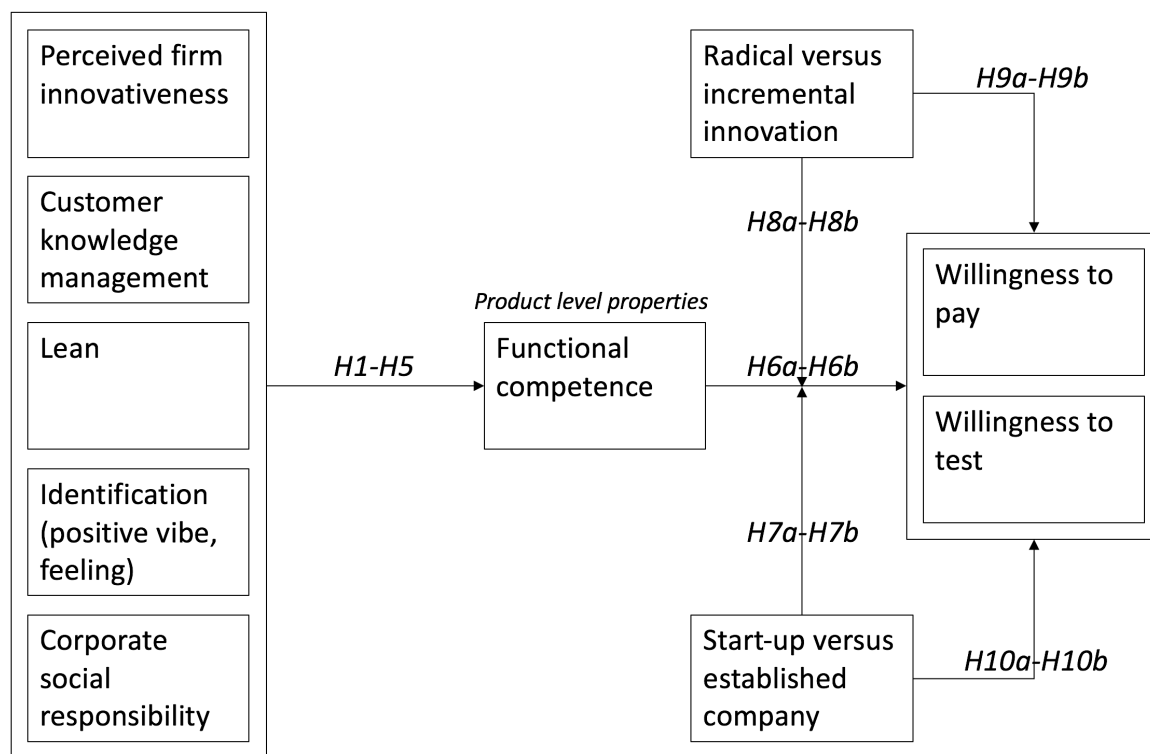


Figure 1 Conceptual model

2.2 Perceived firm innovativeness

Firm innovativeness, whether it is a product or service, can be perceived differently by the consumer, in exchange to how it is perceived by a person from within the company or someone in the same industry (Rogers & Shoemaker, 1971). Employees of a company introducing the innovation, might see it from a technical or functional point of view. Consumers will see if the product, company or idea gives added value to their life. In the article; 'How does perceived firm innovativeness (PFI) affect the consumer?' (Kunz, Schmitt, & Meyer, 2011), the authors suggest that consumers have a much wider view on innovativeness than merely the products a company produces. This study found that firms should consider the perception by the consumers of the firm as a whole, not just new technologies or products, and take into account a functional–cognitive perspective as well

as consumer emotions and experiences. Consumers use a set of company activities they observe in order to form their view on how innovative a company is. These activities also entail how the company communicates, how it names itself and in what 'form' it refers to itself. As Kunz et. al state, "*innovative firms have a 'track record' of successful and meaningful solutions over time, consumers may conclude that the firm will be capable of performing all tasks effectively*". In other words, it is the consumer that determines, for themselves, to what degree a firm is innovative or not. Another study, done by Rubera, G., & Kirca, A. H. (2012) shows that firm innovativeness has a strong relationship with firm value, market position and financial position (Rubera & Kirca, 2012). From the study by Rubera and Kirca can be concluded that it connects with functional competence, because as functional competence (FC)², PFI is an image which the consumers make up of a company. Taking into account prior research, we hypothesize that:

H₁. PFI has a positive effect on FC.

2.3 Customer knowledge management

Customer knowledge management (CKM) is about the knowledge that resides inside the customers which a company retains. As opposed to knowledge about the customers, like their previous buying behavior (Gibbert, Leibold, & Probst, 2002). An important thing to keep in mind is that CKM is not equal to customer relation management (CRM) or knowledge management (KM). Gibbert, Leibold and Probst (2002), go on in saying that corporations that manage the knowledge of their customers, are more likely to sense rising market opportunities, compared to others who do not. Their research also points out that these companies are able to constructively challenge the status quo and with that, create economic value for the company, their shareholders and maybe even more important, their customers. The economic value of CKM is also expressed in another study by Lopez-Nicolas, C., & Molina-Castillo, F. J. (2008) where they found that using CKM tools with e-commerce, can positively impact customer purchases and is considered a risk-reliever when used correctly (Lopez-Nicolas & Molina-Castillo, 2008). To show the relationship between KM, CRM and CKM, table 1 shows examples of key variables explained in these three constructs.

² Functional competence is explained in paragraph 2.7

Table 1 CKM versus KM and CRM (Gibbert, Leibold, & Probst, 2002)

| | KM | CRM | CKM |
|----------------------------|---|---|---|
| Knowledge sought in | Employee, team, company, network of companies. | Customer Database. | Customer experience, creativity, and (dis)satisfaction with products/ services. |
| Objectives | Efficiency gains, cost saving, and avoidance of re-inventing the wheel. | Customer base nurturing, maintaining company's customer base. | Collaboration with customers for joint value creation. |
| Role of customer | Passive, recipient of product. | Captive, tied to product/ service by loyalty schemes. | Active, partner in value-creation process. |
| Corporate role | Encourage employees to share their knowledge with their colleagues. | Build lasting relationships with customers. | Emancipate customers from passive recipients of products to active co- creators of value. |

Table 1 shows a clear difference between each term, the area where the terms originate their knowledge from, what goals they have, what role the customer has in the different terms and what the corporate role of the terms are. What also could be distilled from these examples, is that CKM can be seen as a combination of KM and CRM. It goes beyond and at the same time, builds upon the other two, which is partially confirmed by findings of Lopez-Nicolas, C., & Molina-Castillo, F. J. (2008) where it clearly states that using KM, enables them to execute CKM. In the study done by Gibert et. al, CKM gives companies the ability to create more value (Gibbert, Leibold, & Probst, 2002), which in turn can contribute to an efficient and reliable way of working. Taking into account prior research, we hypothesize that:

H₂. CKM has a positive effect on FC.

2.4 Lean thinking

This construct affects the consumer in this time and age maybe more than ever before. It shows that a company thinks about what time, costs and energy are being used to create a product. By the words of J.P. Womack and D.T. Jones: Lean thinking is a way to do more and more with less and less - less human effort, less equipment, less time and less space - while coming closer and closer to providing customers with exactly what they want (Womack & Jones, 2010). This can be interpreted as an efficient way of doing business and developing products and services. A study by Piercy, N. F., & Morgan, N. A. (1997) shows, that when looking at lean thinking from a marketing perspective, it could provide a company with a comprehensive toolkit. This toolkit would allow and persuade corporations to analyze and track customer value as the basis for their operations design. When done in this way, an unprecedented amount of time, money and resources are saved because all processes and organizational designs would be centered around the customer value (Piercy & Morgan, 1997). This would be the purest form of lean thinking inside of a company.

So, in the study by Piercy et. al, the efficiency and reliability of how a company operates, will certainly improve by lean thinking, when done in the right way (Piercy & Morgan, 1997). Hence, in turn, is bound to have an effect on functional competence in efficiency. Taking into account prior research, we hypothesize that:

H₃. Working lean has a positive effect on FC.

2.5 Identification (positive vibe / feeling)

Companies and brands want to build a deeper relationship with their customers, a relationship in which the customers become advocates for that particular brand or company. Bhattacharya and Sen (2003) call this relationship-gold, having not only loyal customers but at the same time, customers who enthusiastically promote the brand (Bhattacharya & Sen, 2003). This subject finds its origin in subjects like customer satisfaction and relationship marketing. In a study done by Fournier (1998), findings show that the relationship between a person and a brand is in regards to perceived goal compatibility and perceived ego significance of the chosen brands (Fournier, 1998). Hence, when a consumer chooses to feel that deeper relationship, one could conclude that a sense of identification exists, the consumer identifies itself with that brand. This is in line with findings of the study by Bhattacharya and Sen (2003), which shows that these relationships often result in the identification of the consumer, with a company. In addition to that, people look for positive stimulation and want to avoid negative experiences (Brakus, Schmidt, & Zarantonello, 2009).

A positive feeling towards a company will strengthen the relationship between the consumer and the company (Oliver, 1997).

So, when talking about identification, a person would identify itself with a company when their goals align (Fournier, 1998). Linking this with theory from Brakus et. al (2009) in which he states that people are looking for positivism and avoid negative experiences (Brakus, Schmidt, & Zarantonello, 2009). One could conclude that doing a task reliably, as the term functional competence states, should elicit a positive effect from the link with identification. Taking into account prior research, we hypothesize that:

H₄. Identification has a positive effect on FC.

2.6 Corporate social responsibility

Corporate social responsibility (CSR) knows a broad definition: “*the managerial obligation to take action to protect and improve both the welfare of society as a whole and the interest of organizations*” (Davis & Blomstrom, 1975). This definition is interpreted in a wide range of concepts, from an economic point of view like CSR as maximizing returns to shareholders (Freidman, 1970) (Zenisek, 1979) to, more recently, a comprehensive proactive social responsiveness view that articulates a company’s long-term role in a dynamic social system (Mcgee, Rugman, & Verbeke, 1998). The way that Murray and Vogel (Murray & Vogel, 1997) refer to CSR, is calling it pro-social corporate endeavors. This highlights the acts a company executes for others, with no apparent financial gain for themselves. Also, this is how CSR is defined in this paper. Companies are acting on the basis that CSR is not only the “right thing to do” but at the same time “the smart thing to do” (Smith, 2003). In a study done by Luo, X., & Bhattacharya, C. B. (2006), findings show that companies with a low level of innovative capabilities, CSR reduces customer satisfaction and market value (Luo & Bhattacharya, 2006). As Luo et. al state, CSR has an effect on market value and the study by Gurhan-Canli et. al state, functional competence results into perceived value (Gürhan-Canli & Batra, 2004), these two are conclusively connected. These findings suggest that a higher CSR rating by consumers automatically increases the value of functional competence. Taking into account prior research, we hypothesize that:

H₅. CSR has a positive effect on FC.

2.7 Functional competence

The consumers' perception of a company is a huge factor that weighs into the decision-making process when a consumer decides to buy a product from a certain company (Ganesan, 1994). Kunz (Kunz, Schmitt, & Meyer, 2011), defines this as functional competence (FC). FC is the consumers' belief that a company has expertise to perform a job effectively and reliably, which is related to satisfaction (Kunz, Schmitt, & Meyer, 2011). It is also the competence a company has on which the consumer can rely and it results into perceived value of the company (Gürhan-Canli & Batra, 2004). It is important to note that while PFI and FC both take the consumers point of view as a reference point, there is a large difference between the two. A firm can be seen as plain innovative while lacking the competence of putting the innovation to market and vice versa. It is empirical to this research that all the above-mentioned constructs in paragraph 2.2 to 2.6, eventually lead to FC as all constructs are part of the view a consumer has about a company. All constructs also imply a form of efficiency, reliability and satisfaction.

2.8 Willingness to pay

A common measure in economics, WTP is the amount of money that an individual is willing to pay in order to gain the value of the goods presented. In other words, with WTP, we are trying to value a nontraded good with public characteristics. The technique is trying to pinpoint the compensation required to keep the utility level of an individual equal, before and after the exchange of a product or service has taken place. By this mean, it is estimating the impact of change the product or service has on an individuals' aggregated utility (Frew, Whynes, & Wolstenholme, 2003). Using the open end approach to elicit WTP, as according to Donaldson et. al, leads to a lower rate of completion of a questionnaire versus that of a payment scale approach (Donaldson, Thomas, & Torgerson, 1997). The reason for doing business in the first place is to sell your ideas and make people enthusiastic about them. According to Kunz (2011), functional competence leads to consumer loyalty (Kunz, Schmitt, & Meyer, 2011). This finding indicates that consumer loyalty itself, suggests ideas are being sold and consumers get excited about products. Taking into account prior research, we hypothesize that:

H_{6a}: FC has a positive effect on WTP.

2.9 Willingness to test

Another way of testing how well an idea or company is perceived, is to see whether people are willing to spend time and energy on it in a non-final state, hence the minimal viable product (MVP). An MVP is a product that offers just enough value to the end user to add value to their lives and should have just the right amount of features so that the product does not take long to develop (Moogk, 2012). In other words, an MVP is a bare version of the product a company would like to put on the market (Ries, 2011). When a consumer is willing to test this MVP, it shows if a person believes in the product or the company behind it. So, Kunz et. al finds that FC leads to consumer loyalty once the company has the expertise to effectively and reliably launch a product. Taking into account prior research, we hypothesize that:

H_{6b}. FC has a positive effect on WTT.

2.10 Radical and incremental innovation

Interesting to test, is whether there is a difference in preference for a start-up or established company regarding radical and incremental innovations. With a radical innovation, the innovation has a significant impact on a market and the companies that operate in it (Schumpeter, 1942). Incremental innovations enhance or upgrade the performance of an existing service or product. This can be in either the same setting or a different one in which the same product is being used for a different purpose it was originally designed for (Freemna & Soete, 1997). In a recent study by Atuahene-Gima, K. (2005), the author concludes that there is a difference in competence exploitation and exploration regarding a radical innovation. In this study, a radical innovation has a positive relationship to competence exploration and is negatively related to competence exploitation, regarding incremental innovations, the results are reversed (Atuahene-Gima, 2005).

In this experiment, the manipulation will describe to all respondents, either a product of a start-up or that of an established company, which are either called an incremental or radical innovation. A study by Heany (1983) found that new products, served in an existing market, prove to be appropriately linked to start-ups (Heany, 1983). Because of the findings by Heany, expected is that the effect on the relationship between FC and WTP will be positive in case of a start-up. In the same manner, this will influence the relationship between FC and WTT. Taking into account prior research, we hypothesize that:

H_{7a}. Being a start-up increases the positive effect of FC on WTP.

H_{7b}. Being a start-up increases the positive effect of FC on WTT.

And:

H8a. A radical innovation increases the positive effect of FC on WTP.

H8b. A radical innovation increases the positive effect of FC on WTT.

Connecting the abovementioned theory of Heany (1983) and that of Carson (2016), in which Carson states that radical innovations and start-ups are mostly seen as positive attributes (Carson, 2016). It can be assumed to have and positive influence on WTP and WTT. Taking into account prior research, we hypothesize that:

H_{9a}. A radical innovation has a positive effect on WTP.

H_{9b}. A radical innovation has a positive effect on WTT.

H_{10a}. A start-up has a positive effect on WTP.

H_{10b}. A start-up has a positive effect on WTT.

3. Methodology

3.1 Participants and experiment design

The between-subjects experiment that has taken place, was conducted through a questionnaire in collaboration with Roel Bloo, a fellow master Student. The research in progress, being carried out by Bloo, looks at the influence of start-ups, governmental and established companies on willingness to pay. This study looks at the influence of start-ups and the type of innovation on willingness to pay and willingness to test. A collaboration was made to get as many respondents as possible for both of our experiments. We created 7 questionnaires needed for the two experiments, 4 of which are used for this experiment. The separate questionnaires were put under one hyperlink. This hyperlink was then distributed through each of our personal and professional networks. All questionnaires were filled with an even amount of respondents by the means of Qualtrics' Randomizer function (Qualtrics, 2016). Three hundred and sixty-one respondents visited the survey of which two hundred and one, followed through and finished the survey. From those two hundred and one respondents, hundred and twenty-seven filled in the four surveys serving this experiment. In these four questionnaires, there were the same questions, but all came with a different set of properties regarding the type of company and the type of innovation. More information regarding the questionnaire and its questions are covered in the next section.

3.2 Questionnaire design

The questionnaire³ started off with an introduction about a start-up or established company launching either a radical innovation or an incremental innovation. The fictional product that was launched by either of the two types of companies was the same in all cases. Namely, a wireless charger that would charge any device that contains a battery which entered the room the charger was installed in. The intro stories were as follows:

Questionnaire 1

*“A **start-up** is launching a new, **radical innovation**. This product will charge electronic devices that carry a battery, like your mobile phone, wirelessly from the moment you enter a room. You do not need to take your device out of your bag or pocket.*

The product is tested and deemed safe by your national product safety authority.”

³ The full questionnaire can be found in the appendix

Questionnaire 2

*“A **start-up** is launching a new, **incremental innovation**. This product will charge electronic devices that carry a battery, like your mobile phone, wirelessly from the moment you enter a room. You do not need to take your device out of your bag or pocket.*

The product is tested and deemed safe by your national product safety authority.”

Questionnaire 3

*“An **established company** is launching a new, **radical innovation**. This product will charge electronic devices that carry a battery, like your mobile phone, wirelessly from the moment you enter a room. You do not need to take your device out of your bag or pocket.*

The product is tested and deemed safe by your national product safety authority.”

Questionnaire 4

*“An **established company** is launching a new, **incremental innovation**. This product will charge electronic devices that carry a battery, like your mobile phone, wirelessly from the moment you enter a room. You do not need to take your device out of your bag or pocket.*

The product is tested and deemed safe by your national product safety authority.”

In the questionnaire, a seven Likert-scale was used in the constructs PFI, CKM, lean, identification, CSR, PFI and WTT. For PFI, the definition described by Kunz was used (Kunz, Schmitt, & Meyer, 2011) to create the questions. For CKM, the paper by Gibbert, Leibold and Probst on five styles of CKM and how smart companies use them to create value, helped in creating the questions for this construct (Gibbert, Leibold, & Probst, 2002). In the case of lean thinking, the items were created in the same line as the definition of lean; less human effort, less equipment, less time and less space (Womack & Jones, 2010). Identification is measured by the positive constructs of brand experience dimensions (Brakus, Schmidt, & Zarantonello, 2009). For CSR, items were used from (Sen & Bhattacharya, 2001) while FC uses elements from the definition of FC by (Kunz, Schmitt, & Meyer, 2011). With WTP, it is rather difficult to use a set number of amounts for the product that has been chosen. The wireless charger is described in a way which is new to most respondents because it is not being sold yet. Therefore, opting for the open end approach will give respondents more freedom to express the amount of money they think the product is worth (Donaldson, Thomas, & Torgerson, 1997). WTT is being measured by items that come from the Minimal Viable Product (MVP) as this is the first version of a product to come out which should enable consumers to want the product (Ries, 2011).

3.3 Variables and statistics

3.3.1 Dependent variables

The dependent variables that are being tested are twofold because of the earlier mentioned nonexistence of the product which is being used in the questionnaire. WTP gives an indication of the value of the product, WTT adds another layer to indicate market success (Ries, 2011). With WTP, the monetary value, which is being filled out in United States Dollars (US\$), will be used to measure the difference between experiment conditions. In the case of WTT, its set of questions on a Likert-scale of 1-7, will be combined to one dependent variable. For WTT, a Cronbach's Alpha calculation was used to ensure reliability.

3.3.2 Independent variables

The independent variables in the experiment are as follows:

- PFI
- CKM
- Lean
- Identification
- CSR

These are all combined variables from the set of questions per construct on a Likert-scale of 1-7, that were created for these constructs. Functional competence can also be seen as an independent variable as it is used to predict WTP and WTT. For all combined constructs a Cronbach's Alpha calculation was used to ensure reliability. Regression analyses⁴ were carried out to determine the causality between the independent variables and the dependent ones.

3.3.3 Moderators

The moderators used in this experiment are for the company described in the questionnaire being a start-up versus being an established company and the product being an incremental innovation versus being a radical innovation.

3.3.4 Mediator

As can be seen from the conceptual model in figure 1, the mediator in this experiment is Functional competence, which aims to get predicted by the independent variables which in turn aims to predict the dependents WTP and WTT.

⁴ The regression analyses can be found in table 2.

4. Results

4.1 General information

From the hundred and twenty-seven respondents, sixty-five of them were female and sixty-two male. Their age ranged from 19 to 61 and the average respondents' age was 30 years old. Sixty-three point eight percent are living in The Netherlands and the remaining thirty-six point two percent live scattered around the globe for a duration of at least six months. Lastly, eighty-three point four percent completed or were currently enrolled in a Bachelors' degree program or higher.

4.2 Verification of hypotheses

The Cronbach's Alpha test for the constructs mostly came out as "very good" and above .8. There were two constructs which came out with a value, lower than .8, namely lean and identification, these had a value of .797 and .746 respectively. Also, a correlation matrix was executed which found no perfect positive or negative correlation⁵.

Table 2 Regression analyses

| Dependent Variable | Study 1 | Study 2 | Study 3 | Study 4 | Study 5 |
|--------------------|---------------------|-----------------------|----------------------|----------------------|---------------------|
| | FC | WTP | WTT | WTP | WTT |
| Independent b (p) | | | | | |
| Constant | .67 (.159) | -2.86 (.921) | 3.05 (.000)** | -18.45 (.702) | 2.58 (.018)* |
| PFI | .33 (.001)** | | | | |
| CKM | .15 (.046)* | | | | |
| Lean | .16 (.138) | | | | |
| Identification | .16 (.345) | | | | |
| CSR | .03 (.758) | | | | |
| FC | | 17.34 (.004)** | .38 (.005)** | 20.13 (.037)* | .47 (.030)* |
| Radical | | 1.98 (.878) | -.31 (.276) | -79.95 (.232) | -1.18 (.430) |
| Start-up | | -17.62 (.167) | .10 (.714) | 61.64 (.303) | 1.54 (.250) |
| FC x Radical | | | | 16.30 (.210) | .17 (.550) |
| FC x Start-up | | | | -16.08 (.175) | -291 (.272) |
| R ² | .42 | .09 | .07 | .12 | .08 |

* : Sig. at 5%

** : Sig. at 1%

Notes: Statistics show unstandardized B value coefficients and in parentheses is the p-value.

⁵ The reliability and correlation validity table can be found in the appendix.

As seen in table 2, in support of H_1 , we find that perceived firm innovativeness has a positive effect on functional competence ($B = .33$, $p = .001 < .01$, $R^2 = .42$). In line with H_2 , we find that customer knowledge management has a positive effect on functional competence ($B = .15$, $p = .046 < .05$, $R^2 = .42$). H_3 predicted that working in a lean manner would have a positive effect on functional competence, albeit having effect, this is not found to be significant ($B = .16$, $p = .138 > .05$, $R^2 = .42$). As goes for H_4 and H_5 which respectively state that identification and corporate social responsibility have a positive effect on functional competence ($B = .16$, $p = .345 > .05$, $R^2 = .42$ & $B = .03$, $p = .748 > .05$, $R^2 = .42$). H_{6a} is supported, from which can be said that functional competence has a positive effect on willingness to pay ($B = 17.43$, $p = .004 < .01$, $R^2 = .09$). Functional competence also has a positive effect on willingness to test as stated in H_{6b} ($B = .38$, $p = .005 < .01$, $R^2 = .07$).

Testing the moderator start-up in in study 4 and 5, H_{7a} and H_{7b} anticipated an increase on the effect of functional competence on willingness to pay and willingness to test when being a start-up. The results show a negative effect ($B = -16.08$, $p = .175 > .05$, $R^2 = .12$ & $B = -.291$, $p = .272 > .05$, $R^2 = .08$). When testing the moderator radical in H_{8a} and H_{8b} which envisioned an increased positive effect of functional competence on willingness to pay and willingness to test, this was confirmed, but also not significantly ($B = 16.30$, $p = .210 > .05$, $R^2 = .12$ & $B = .17$, $p = .550 > .05$, $R^2 = .08$).

H_{9a} and H_{9b} anticipated a positive effect of a radical innovation on willingness to pay and willingness to test. We find a positive effect on willingness to pay ($B = 1.98$, $p = .878 > .05$, $R^2 = .09$) and a negative effect on willingness to test ($B = -.31$, $p = .276 > .05$, $R^2 = .07$) in study 2 and 3 respectively. Being a start-up, which was tested in H_{10a} and H_{10b} , foresaw a positive effect on willingness to pay and willingness to test. For willingness to pay in H_{10a} , this was not supported as it showed a negative effect ($B = -17.62$, $p = .167 > .05$, $R^2 = .09$). For willingness to test, admitting not significant, it did show a positive effect ($B = .10$, $p = .714 > .05$, $R^2 = .07$). An overview of all hypotheses can be found, checked for support, in table 3.

Table 3 Summary of Hypotheses test results

| Hypothesis | Prediction | Study |
|------------|--|-------------|
| H_1 | PFI has a positive effect on FC. | supported |
| H_2 | CKM has a positive effect on FC. | supported |
| H_3 | Working lean has a positive effect on FC. | unsupported |
| H_4 | Identification has a positive effect on FC. | unsupported |
| H_5 | CSR has a positive effect on FC. | unsupported |
| H_{6a} | FC has a positive effect on WTP. | supported |
| H_{6b} | FC has a positive effect on WTT. | supported |
| H_{7a} | Being a start-up increases the positive effect of FC on WTP. | unsupported |
| H_{7b} | Being a start-up increases the positive effect of FC on WTT. | unsupported |
| H_{8a} | A radical innovation increases the positive effect of FC on WTP. | unsupported |
| H_{8b} | A radical innovation increases the positive effect of FC on WTT. | unsupported |
| H_{9a} | A radical innovation has a positive effect on WTP. | unsupported |
| H_{9b} | A radical innovation has a positive effect on WTT. | unsupported |
| H_{10a} | A start-up has a positive effect on WTP. | unsupported |
| H_{10b} | A start-up has a positive effect on WTT. | unsupported |

Notes: Supported: $p < .05$

4.3 Exploratory research

4.3.1 Averages between groups

Between subject analysis has shown that there is a difference, although not significant (table 4), to be seen between the different surveys. When it comes to WTP, respondents that have seen the questionnaire with an established company and an incremental innovation, are willing to pay most for the fictional product with an average WTP of 90,8 US\$. In contrast to this, the questionnaire stating the start-up with an incremental innovation received the lowest amount with a WTP of 51,64 US\$ (see figure 2).

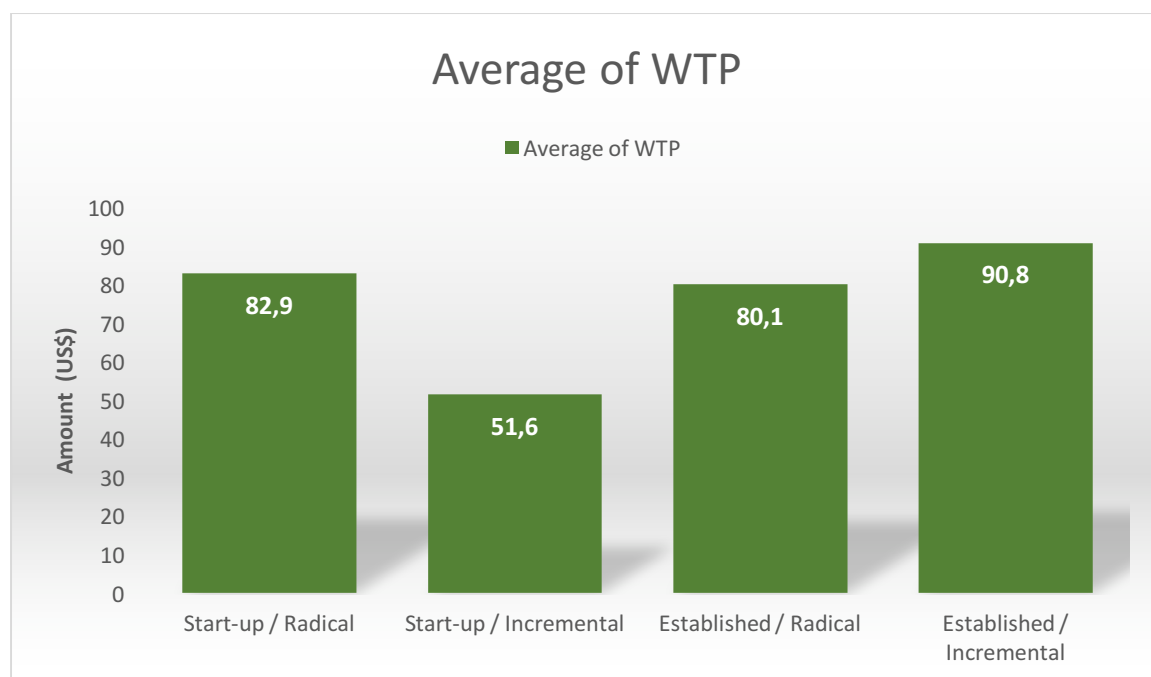


Figure 2 Averages of willingness to pay per questionnaire

With WTT, there is a stark difference to be seen as opposed to the WTP, considering it is also not significant, the group start-up / incremental has the highest willingness to test (5,0). The lowest willingness to test of 4,7 is connected to the group with the start-up with a radical innovation (see figure 3).

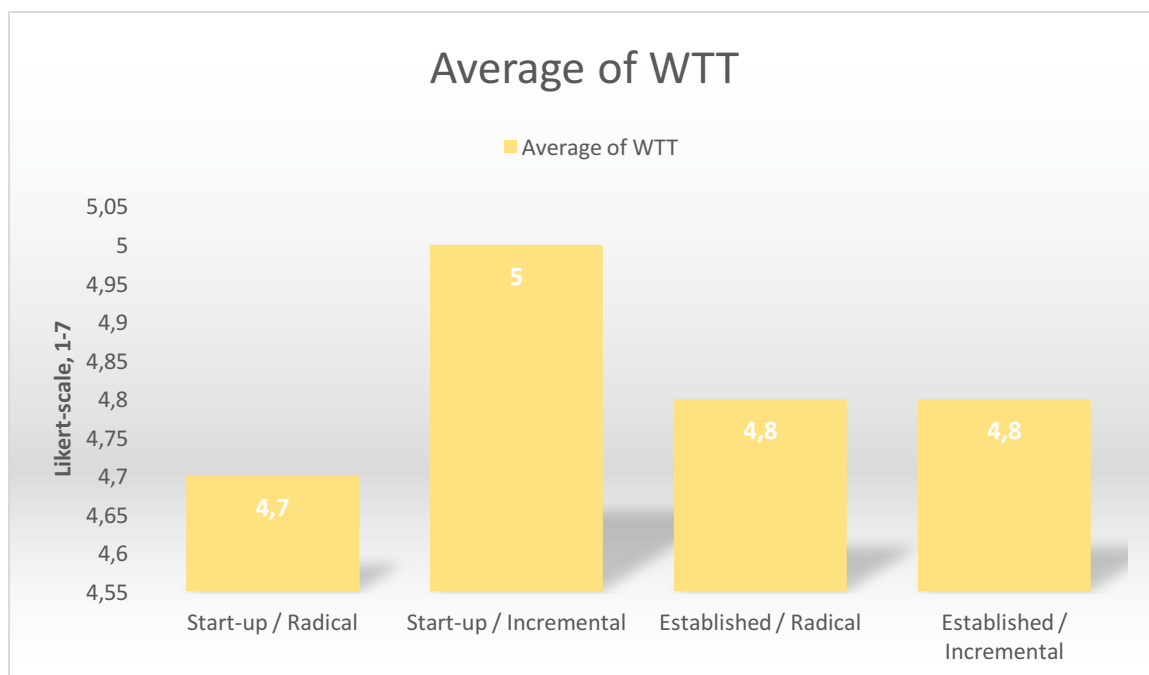


Figure 3 Averages of willingness to test per questionnaire

Table 4 Mean differences of WTP and WTT

| | Study 6 | Study 7 | Study 8 | Study 9 |
|---------------------------|-----------------------|---------------------------|--------------------------|------------------------------|
| b(p) | Start-up / Radical | Start-up / Incremental | Established / Radical | Established / Incremental |
| WTP | | | | |
| Start-up / Radical | | 31.28 (.360) | 2.85 (.999) | -7.88 (.976) |
| Start-up / Incremental | -31.28 (.360) | | -28.42 (.373) | -39.16 (.108) |
| Established / Radical | -2.85 (.999) | 28.42 (.373) | | -10.74 (.930) |
| Established / Incremental | 7.88 (.976) | 39.16 (.108) | 10.74 (.930) | |
| WTT | | | | |
| Start-up / Radical | | -.32 (.877) | -.13 (.991) | -.16 (.982) |
| Start-up / Incremental | .32 (.877) | | .19 (.963) | .16 (.977) |
| Established / Radical | .13 (.991) | -.19 (.963) | | -.03 (1.000) |
| Established / Incremental | .16 (.982) | -.16 (.977) | .03 (1.000) | |

* : Sig. at 5%

** : Sig. at 1%

Notes: Statistics show the mean difference of the Tukey test and in parentheses is the p-value.

ANOVA sig. WTP: .125

ANOVA sig. WTT: .898

Homogeneity of variances sig. WTP: .214

Homogeneity of variances sig. WTT: .566

4.3.2 Mediation analysis

When testing the mediating role of functional competence, another set of regression analyses were carried out. Table 5 reports the results of these analyses.

Table 5 Mediator Regression analyses

| Dependent Variable | Study 10 | Study 11 | Study 12 | Study 13 |
|--------------------|---------------|----------------------|---------------------|---------------------|
| | WTP | WTP | WTT | WTT |
| Independent b(p) | | | | |
| Constant | -19.47 (.634) | -29.90 (.463) | 1.79 (.037)* | 1.77 (.041)* |
| PFI | 4.28 (.614) | -.78 (.929) | -.03 (.877) | -.03 (.852) |
| CKM | 10.30 (.106) | 7.00 (.210) | .30 (.023)* | .30 (.028)* |
| Lean | -4.46 (.632) | -6.96 (.454) | -.07 (.708) | -.08 (.698) |
| Identification | 2.44 (.870) | -.09 (.995) | .47 (.129) | .47 (.134) |
| CSR | 5.70 (.547) | 5.18 (.580) | -.06 (.773) | -.06 (.771) |
| FC | | 15.62 (.047)* | | .02 (.894) |
| R ² | .07 | .10 | .16 | .16 |

* : Sig. at 5%

** : Sig. at 1%

Notes: Statistics show unstandardized B value coefficients and in parentheses is the p-value.

Study 11 show that FC mediates the independent variables PFI, CKM, lean, identification and CSR to the dependent WTP ($B = 15.62$, $p = .047 < .05$, $R^2 = .10$). When analyzing the results of study 12 and 13, the independent variable CKM seems to have a significant effect on WTT before ($B = .30$, $p = .023 < .05$, $R^2 = .16$) and after the mediator is introduced ($B = .30$, $p = .028 < .05$, $R^2 = .16$). From this, we can conclude that functional competence does not fully mediate the effect of the independent variables PFI, CKM, lean, identification and CSR to the dependent WTT ($B = .02$, $p = .894 > .05$, $R^2 = .16$).

5. Discussion

5.1 General discussion

The aim of this paper is to understand the influence of start-ups and innovations on willingness to pay and willingness to test. From the results, we can see that H_1 is supported by this research. Presumably, this is because of the proximity of the meaning people connect to perceived firm innovativeness and functional competence. It brings me back to the quote by Peter Drucker with which I started the introduction: *“Because the purpose of a business is to create a customer, the business enterprise has two – and only two – basic functions: marketing and innovation”*. When a business does not innovate, the reason to exist (to have a purpose), and therefore to have functional competence, fade away. In that regard, I want to conjointly add H_2 , because customer knowledge management gives a company the ability to have a dialog with its customers and innovate on the findings from that dialog. When taking lean, identification and CSR into account, they seemingly too, add value to the functional competence of a company. Therefore, the fact that H_3 , H_4 and H_5 are not supported could be contributed to the lack of a larger group of respondents. It will be useful to replicate this experiment over a larger amount of time while creating a larger sample.

In line with H_{6a} , our findings support the positive effect of functional competence on willingness to pay. I believe this is because functional competence shows a degree of ‘trust’ which a consumer puts in a certain company and willingness to pay, confirms this. Saying these two constructs show the same, would be one step too far, but they are surely correlated. As goes for H_6 , the same explanation could be given.

When the results of H_{7a} and H_{7b} , were clear. It showed no significant difference, this suggests that consumers actually have no preference from what kind of company their products derive. I would suggest what I have mentioned earlier and conduct this experiment with a larger sample size. As Heany (1983) also mentions, new innovations in existing markets, are closely linked to start-ups (Heany, 1983).

With H_{8a} and H_{8b} not supported, it means that there is indifference amongst consumers regarding the introduction of radical innovations and incremental innovations. It could be that consumers do not value the difference. Another theory is, which should be researched, that the value which a developer of an innovation gives to a radical- or incremental innovation, is not the same as how the consumer sees it. This is in line with the theory of PFI by Kunz (2011). In this retrospect, H_{9a} , H_{9b} , H_{10a} and H_{10b} , tell me a similar story. Unsupported and aiming towards the same direction as the H_{7a} to H_{8b} . Summarizing; either the consumer is indifferent when it comes to radical or incremental innovations when it comes from either a

start-up or an established company, or the effects that are not significant in this study, prove to be significant in a similar experiment with a larger sample size.

On a sideline, there are differences to be seen in the averages per group on willingness to pay and willingness to test, while not significant, they do show some interesting results: a radical product elicits a greater willingness to pay when introduced by a start-up. Incremental innovations see a higher willingness to pay value when introduced by an established company. Regarding willingness to test, a radical innovation shows higher values. Incremental innovations get a greater result on willingness to test when introduced by an established company.

The results of this experiment are meaningful for theoretical and managerial purposes because to some extent, they try to fill the gap that exists between understanding what the type of company and the type of innovation do to willingness to pay and willingness to test. Moreover, this research extends the literature that identifies the effect of company image on product evaluations. This study adds to marketing theory by being perhaps one of the first to empirically test the influence of the type of company and the type of innovation to willingness to pay and willingness to test performance.

5.2 Managerial implications

The findings on averages of willingness to pay and willingness to test are intriguing. When the respondents are asked to test an unfinished, incremental innovation, a start-up comes out with the highest willingness to test compared to the established company. When it comes to willingness to pay, the incremental innovation, does its best at an established company. For a radical product, these findings are the opposite. This could translate into a compelling strategy where an incremental innovation is best tested under the flag of a start-up. By the time the conceiver of the innovation wants to sell the finished product to a large group, this is then better done under the flag of an established company.

As found in this experiment, radical innovations see a higher willingness to pay when introduced by a start-up, managers could take this into consideration when a new breakthrough in technology has been found. For example, thinking of an established company which wants to test a new radical innovation, this company could then create a start-up under a new name with the new radical innovation and funds to work independently from the already established company. By starting this start-up, the radical innovation will see a higher revenue.

Our results inform managers that radical innovations elicit a higher willingness to pay than willingness to test. Start-ups in general elicit a higher willingness to test than willingness to

pay. When introducing an innovation, it is good to take note of this and see where this knowledge can be used in product introductions. For example, when introducing a radical innovation, a manager could decide to have a high price to start with. As the lifetime of that innovation increases, lowering the price.

When the goal of a manager is to let consumers try out an innovation, radical or incremental, it is wise to introduce this product under a start-up. As the bar for consumers to test, is lower at a start-up than compared to an established company.

5.3 Limitations and areas for further research

I conducted this research with my personal network. This resulted in a sample of mainly students, so there can be some problems the external validity of the outcomes.

When thinking about a larger sample size, the 127 respondents are not a large enough group for some findings to be significant. The number of respondents that were deleted after not completing the survey fully⁶ have most likely influenced the results as well. All research is limited by some means, whether it is time, money, sample size or diversity, as is this research. When discussing the sample size, it will be good to have a larger and more diverse sample to see if more hypotheses are being supported and if current findings resonate throughout a larger group. More diversity of nationalities will be interesting to get a refined conclusion per region and country. Per country is important as one can imagine that the view of start-ups, established companies, incremental- and radical innovations differ per region.

Another limitation that has influenced the results, is the product used in the questionnaire. This product is a hypothetical product, when using other products, the outcome might differ from what has been found in this experiment. When an existing product, one that is more mundane, is used for this experiment, the WTP could also have a Likert-scale and the mean comparison could give a stronger outcome. The responses given on products that people are already familiar with, may, coinciding elicit more response.

This experiment and theory, with its outcome, should be tested and observed in a real live scenario. Only this way, will the theory stand. If companies take these findings and adapt their strategies to it, there will be a good live case.

⁶ As mentioned in chapter 3, methodology.

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Appendix 1

The questionnaire

Erasmus University Rotterdam: a view on innovation

Thank you for participating in this survey.

The survey will take approximately 5 minutes of your time.

Please answer the questions honestly. Your answers are completely anonymous.

If you have any questions or remarks regarding this survey, please write to the following e-mail address.

innovation.erasmus@gmail.com

Thank you for your time and effort.

Please read the following text carefully before answering the questions below:

An **established company** is launching a new, **radical innovation**. This product will charge electronic devices that carry a battery, like your mobile phone, wirelessly from the moment you enter a room. You do not need to take your device out of your bag or pocket.

The product is tested and deemed safe by your national product safety authority.

Please indicate your agreement or disagreement with each of the following statements:

| | Strongly disagree | Disagree | Somewhat disagree | Neither agree nor disagree | Somewhat agree | Agree | Strongly agree |
|---|-----------------------|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|-----------------------|
| I believe that this company is capable of launching novel products. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I believe that this company is capable of launching creative products. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I believe that this company is capable of launching impactful products. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Please indicate your agreement or disagreement with each of the following statements:

| | Strongly disagree | Disagree | Somewhat disagree | Neither agree nor disagree | Somewhat agree | Agree | Strongly agree |
|--|-----------------------|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|-----------------------|
| I believe that this company is aware of my personal needs. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I believe that this company is capable of anticipating on my personal needs. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I believe that this company is capable to translate my personal needs into a product (or service). | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Please indicate your agreement or disagreement with each of the following statements:

| | Strongly disagree | Disagree | Somewhat disagree | Neither agree nor disagree | Somewhat agree | Agree | Strongly agree |
|--|-----------------------|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|-----------------------|
| I believe that this company is able to identify unnecessary resources (materials, human). | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I believe that this company is able to eliminate unnecessary resources (materials, human). | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I believe that this company is good in optimizing its processes. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Please indicate your agreement or disagreement with each of the following statements:

| | Strongly disagree | Disagree | Somewhat disagree | Neither agree nor disagree | Somewhat agree | Agree | Strongly agree |
|--|-----------------------|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|-----------------------|
| I have a positive attitude towards this company. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I can identify myself with this type of company. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Please indicate your agreement or disagreement with each of the following statements:

| | Strongly disagree | Disagree | Somewhat disagree | Neither agree nor disagree | Somewhat agree | Agree | Strongly agree |
|---|-----------------------|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|-----------------------|
| I believe that this company can be socially responsible. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I believe that this company devotes resources to social responsibility. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Please note, the following questions are about the same text as mentioned in the beginning of the survey:

A **established company** is launching a new, **radical innovation**. This product will charge electronic devices that carry a battery, like your mobile phone, wirelessly from the moment you enter a room. You do not need to take your device out of your bag or pocket.

The product is tested and deemed safe by your national product safety authority.

Please indicate your agreement or disagreement with each of the following statements:

| | Strongly disagree | Disagree | Somewhat disagree | Neither agree nor disagree | Somewhat agree | Agree | Strongly agree |
|--|-----------------------|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|-----------------------|
| I believe this company will be effective into bringing this product to market. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I believe this company is reliable regarding the launch of this product. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I believe this company has the expertise to launch this product. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

How much (US\$) are you willing to pay for this product?

Please indicate your agreement or disagreement with each of the following statements:

| | Strongly disagree | Disagree | Somewhat disagree | Neither agree nor disagree | Somewhat agree | Agree | Strongly agree |
|--|-----------------------|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|-----------------------|
| I am willing to use the product in an early stage of development. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am willing to give active feedback in an early stage of development. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

What is your age?

What is your gender?

Male

Female

What is the highest degree or level of school you have completed? If currently enrolled in any, please select that one.

What is your current country of residence? If living abroad, select that country when you have lived there for more than 6 months.

You have completed the survey

Thank you for participating in this survey, you have been a valuable addition to my research on innovation.

If you have any questions or remarks regarding this survey, please write to the following e-mail address.

innovation.erasmus@gmail.com

Thank you again for your time and effort.

Appendix 2

Reliability and Correlation validity.

| | Construct | α^1 | α^2 | Correlations ³ | | | | | | | | |
|---|----------------|-------------------|------------|---------------------------|-----|-----|-----|-----|-----|-----|---|--|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| 1 | PFI | .825 | | | | | | | | | | |
| 2 | CKM | .889 | | .43 | | | | | | | | |
| 3 | Lean | .797 | .885 | .44 | .41 | | | | | | | |
| 4 | Identification | .746 ^a | | .60 | .58 | .78 | | | | | | |
| 5 | CSR | .817 ^a | | .55 | .55 | .55 | .71 | | | | | |
| 6 | FC | .864 | | .55 | .47 | .50 | .58 | .47 | | | | |
| 7 | WTP | | | .17 | .24 | .09 | .17 | .20 | .27 | | | |
| 8 | WTT | .850 ^a | | .21 | .36 | .25 | .35 | .26 | .23 | .20 | | |

¹ Cronbach's Alpha

² Cronbach's Alpha after item deleted when original value was between .6 and .8

³ Pearson Correlation

^a Cronbach's Alpha from a construct that consists of two items