Erasmus School of Economics

Thesis

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(Major in Marketing)

The psychological effects of participation in crowdsourcing on customer's willingness to pay and recommend a brand

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Abstract

Recently, a new concept of *crowdsourcing* has started attracting people's attention in the market management. It is defined by Howe (2008) as "the act of taking a job traditionally performed by a designated agent and outsourcing it to undefined, generally large groups of people in the form of an open call" (p. 1). The popularity of crowdsourcing gives interest for this study to gain more insight of it in the marketing perspective. So in this study, it proposes a new way to look at crowdsourcing, which is from the customer's perspective, to explore the psychological effects that gained from crowdsourcing (self-identity and social identification), and its influence on people's behavioural intention, namely, willingness to pay and willingness to recommend. The model was built on the theoretical concept from previous study of crowdsourcing as well as the practical crowdsourcing campaigns that were executed by companies in the field of customer aspect. The key informant approach was used in the survey to get validate answer from respondents. In terms of the analysis, the independent samples t-test, linear regression and the structural equation modelling were performed to capture the results. The finding is concluded that people's self-identity and social identification could enhance WTP and WTR respectively. Moreover, it is also interesting to find out that psychological empowerment has only mediation effect between the self-identity/social identification with WTP, but not with WTR. What's more, based on the results, the managerial implications were given to help marketing manager in learning how to organize the crowdsourcing campaign in practice.

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1. Introduction

In February 2007, Dell launched the "Dell's Idea Storm community" in order to collect customer ideas on a global basis. Dell did this to improve their products and services. Up to now, the program has collected over 29,312 ideas, of these ideas they have implemented more than 549 (Bayus, 2013; "Ideastormcom," 2016[1]). Similarly, in May 2009, the "beta cup challenge" that was launched by the Betacup, to seek a more convenient alternative to the reusable coffee cup. After a one year contest, they collected more than 430 submissions from 13,000 comments and 5,000 ratings, which resulted in gaining valuable ideas that helped to reduce the consumption of paper cups (www.thebetacup.com, 2010[2]). Another example where companies reached out to their customers can be found at the Lego Company in 2011. Lego launched the "Lego Cuusoo crowdsourcing platform" on a global level. Their plan was to generate new Lego sets from the fan or customer-designed models, and by communicating and collaborating with their customers through this special channel. Lego was able to attract some big market attention and interest from their customers (Schreier, Fuchs & Dahl, 2012). These are just some examples of the recent trend towards crowdsourcing. Crowdsourcing is a new tool for companies through which consumers are given more and more authority and opportunity to co-create and customize the products or services that they want.

This new paradigm is a phenomenon that reflects a new trend towards innovative democratization (Fuchs & Schreier, 2011; Von Hippel, 2005), whereby activities that used to occur and discussed only inside a company, are now often co-created with stakeholders from the outside company, namely customers (Schulze & Hoegl, 2008). In other words, more and more companies are using crowdsourcing as a tool to tap into the crowd and reach for more intelligent properties regarding creation and innovation. What's more, Howe (2006a) is considered as the first person that described the crowdsourcing in a business context, and thereafter crowdsourcing is becoming an increasingly popular way of marketing innovation, for example, some companies use crowdsourcing to predict and forecast the marketing demand. In contrast to the traditional means of product and service development, it is using "the new pool of cheap labour" to get access to loads of resources and information from the actual product user on a worldwide base (Howe, 2006c; Huang, Vir Singh & Srinivasan, 2014). Therefore, it is considered as a way of gathering ideas from a diverse background with fewer constraints and control of the company. Because of this, people can take advantage of their own specialisation

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[1] Ideastorm can help take your idea and turn it into reality. (2016). Retrieved May 7, 2016, from http://www.ideastorm.com/

[2] Thebetacupcom. (2010). Retrieved May 7, 2016, from http://www.thebetacup.com/2010/06/17/the-finale/

and professional knowledge, and that has the potential to create and capture value in a different way than before.

An important aspect is that crowdsourcing also attracts a customer's attention and reveals information of their concerns to the company (Schreier et al., 2012). Therefore, it is accepted and applied by more and more companies in different industries (Bonabeau, 2009; Dahl, Fuchs & Schreier, 2014; Fuchs & Schreier, 2011). In addition, it is also stated in prior studies, customers show a high preference for companies that make use of the user-driven market philosophy (Dahl et al., 2014). This gives rise to the idea that customers perceive companies who engage in crowdsourcing as having a high innovation capability. It will in turn increase customer trust in such companies, and contribute to the innovation success and positive outcomes of higher perceived value for the company (Schreier et al., 2012; Shah, 2000).

2. Problem Statement, Research Objective and Contribution

2.1 Problem statement

As one can see from the statements in chapter 1, crowdsourcing can offer a lot of opportunities and benefits to companies, which is most likely the reason why it is becoming so popular among companies. However, what should be noticed here is that crowdsourcing was firstly adopted in the open source software industry. The developers of open source software use crowdsourcing to seek the solution for complicated computing or technical issues that they were unable to solve inside their own company (Dahl et al., 2014). This means that crowdsourcing was originally only open for limited audiences with professional knowledge (i.e., crowdsourcing innovation activities to expert innovators). However, in recent years with the growth of information communication technologies, the use of crowdsourcing is being more widely adopted and applied – for instance in the fast-moving consumer goods industry - to rely on non-expert innovators (e.g. customers) and to go beyond new product development towards supporting, among others, the company's marketing activity (Gatautis & Vitkauskaite, 2014; Vukovic, 2009).

In the academic perspectives, researches have devoted considerable attention and examined different aspects of crowdsourcing, such as the fundamental outcomes and the consequences of crowdsourcing, or the motivation people have to get involved in crowdsourcing activity, either through monetary returns or skill learning compensation (Brabham, 2008). Among others, Ryan and Deci (2000)'s theory of the types of motivations within the self -determination continuum, as well as Amabile's (1993) examination in the motivational synergy model by integrating the intrinsic and extrinsic motivation have had an enormous contribution to this area of research. Dawson and Bynghall (2012) suggested 10 key factors to successfully implement the crowdsourcing, such as the "contributors' breadth", the "public reputation measures" etcetera.

Despite so much research there have only been a limited amount of studies focused on the people themselves in the crowdsourcing activity. It has not been looked at how these people saw the company and how participation affected, furthermore, how they valued the company during the participation process as well as their behavioural intention. So the topic of crowdsourcing in respect to the participants' psychological effects has not been widely researched in a scientific perspective (Gatautis & Vitkauskaite, 2014).

What's more is that prior research show that a customer's demand for the product will increase if they are empowered to select it (Fuchs, Prandelli & Schreier, 2010). Franke, Schreier & Kaiser's (2010) research, the "I Designed It Myself" effect proves there is a positive effect on

the user's perception towards the company if they have a say in the making of the product. As can be seen from the examples above, there is an important factor of *psychological empowerment* –as an increased motivation added intrinsically towards a task or activity (Spreitzer, 1995) - that is accepted as a positive consequence of crowdsourcing. In this thesis, I build on these theoretical insights to argue that psychological empowerment plays a significant role to explain people's behavioural intentions, such as their willingness to pay, or their willingness to recommend a brand that engages in crowdsourcing activities. In other words, it is important to examine how crowdsourcing affects the reputation of the firm in the eyes of their customers, and how much can people be influenced by it.

Although the topic of participating crowdsourcing that trigger out positive outcome of people's willingness to pay or willingness to recommend has already been studied, by using psychological empowerment as the mediating process has not been widely addressed. Therefore, taking note of the gaps in the research field, this paper focused on the collaboration-based crowdsourcing, and aimed to explore the psychological empowerment of people's participation in crowdsourcing and how this has an impact on their future purchases. This gives the following research question:

Research question:

What are the psychological effects of participation in crowdsourcing on customer's willingness to pay and recommend a brand?

Sub questions:

1. Does the crowdsourcing participation empower people with a positive feeling toward their self-identity and social identification?
2. Does the self-identity and social identification gained from crowdsourcing participation enhance people's willingness to pay?
3. Does the self-identity and social identification gained from crowdsourcing participation enhance people's willingness to recommend?
4. Is there a positive relationship between the psychological empowerment gained from crowdsourcing and people's willingness to pay and willingness to recommend?

2.2 Scientific and Managerial Relevance

Prior researches have shown that company can indeed get lots of benefits from organizing a crowdsourcing program (Howe, 2006a). For example, a company can expand their local search area for the information they need by using the Internet to overcome their location biases. Additionally, companies can also use the data collected from crowdsourcing to catch up on business opportunities and make better decisions because of that (Bonabeau, 2009). Crowdsourcing is considered as an effective way to build positive brand associations with the customer. They are more likely to share the same values and customers are more likely to share their positive experiences and attract other people's interest.

Another advantage of crowdsourcing could be that it encourages interaction between customers and the company. This will contribute to the company's innovation success, which will lead again to an increase in the potential of future sales (Fuchs & Schreier, 2011). However, in the perspective of psychological domain, there are also lots of studies done in the field of exploring people's cognition status in guiding their behavioural intention. Such research includes intrinsic and extrinsic motivation with respect to the human wellbeing development. In this case, the scope of study is not merely focusing on the crowdsourcing itself, but it combines the phenomenon of crowdsourcing with the theoretic concept of the psychological empowerment. This way it provides a new viewpoint of the effect of crowdsourcing activity on a company's performance from the participant's perspective (Howe, 2008).

Moreover, real data also collected from the practical is going to be applied in the operationalization process to provide the reliability and validity finding to the research. Therefore, this study may be of interest to researchers in the field of crowdsourcing, and provides extended support for further research on the topic of crowdsourcing.

From the managerial perspective, some prior studies show methods to maximize the outcome of crowdsourcing, give company extensive suggestions on generating diversity and applicable arguments from a worldwide base, and show them a way to reduce the cost and risk in marketing management (Dahl et al., 2014). Hence, taking the previous conclusions as the fundamental basis of this study, it is needed to provide an understanding of the crowdsourcing phenomenon from a customer perspective, and how to better use the crowdsourcing into their marketing strategy to increase sales. However, because crowdsourcing is still a new concept in the marketing application, it is expected that the conclusion from this study can provide managers with a better understanding of how to use crowdsourcing. This will give them the opportunity to increase their firm's competitive advantages and innovative thinking (Afuah & Tucci, 2012). More specifically, companies could adjust their strategy of crowdsourcing based

on their own situation. This will make them better at adapting and stimulating certain motivations of specific customers who are showing more interest and potential, in order to make their marketing activity more efficient (Fuchs & Schreier, 2011). The findings from the study could also benefit the customer, and gain them insight in understanding their behaviour in the participation dimensions, and also in their gains and losses from engaging in crowdsourcing activity.

2.3 Structure of the Thesis

The remaining part of the thesis is structured as follows. The introduction section (Chapter 1), followed by the problem statement, research objective and contribution section (Chapter 2), next the theoretical background section (Chapter 3) is given to provide a clear understanding of the concept of crowdsourcing as well as the limitation of it. Theory and hypotheses section (Chapter 4) are presented following, which explained the conceptual framework for this study, as well as the logistic in connecting each component from the independent variables to dependent variables, and its corresponding factors in the research question. Then in the research methodology section (Chapter 5), I discuss the method conducted in this study, followed by the data analysis (Chapter 6), where the data collected from the survey is analysed and the result is provided. Finally, the conclusion (Chapter 7) is summarized in order to answer the research question, and academic and managerial contributions are provided and discussed afterwards. The thesis is finished by the limitation and future research direction to the domain of crowdsourcing and its impact on participants' willingness to pay and willingness to recommend.

3 Theoretical Background - Crowdsourcing

3.1 What Is Crowdsourcing: The Origin

The original use of crowdsourcing can be dated back to 1714, when the British government for the first time asked the public who could come up with an idea to locate a ship at sea (Afuah & Tucci, 2012). Although it is not the exactly same as what people define as crowdsourcing nowadays, the idea of using collective intelligence to find better solutions is the same. From then on, the concept of crowdsourcing started developing and coming into people's mind. However, when we look into the recent develop in the research domain, and it is found that the idea was inspired by the principal of self-service, which emerged in the retailing industry around the 1970s, for example, adopted by companies like Ikea (Kleemann, Voß & Rieder, 2008). In the self-service, consumers were no longer passively acting in the purchasing process, but actively engaging in their decision-making. The decision-making also has a broader meaning here, it not only refers to the possibility of choosing from more available choices, but also give consumer more responsibilities in the product design or production process (Ritzer, 1983).

Later on, the term "prosummers" showed up to describe consumers who purchase the product that is designed by themselves (Toffler, Longul & Forbes, 1981). The phenomenon of "McDonaldization" illustrated the self-service in the business orientation; where customers were asked to take a role in performing the service. For example, the drive-in and drive-through restaurants are settled to speed up the food consumption process and serve more people (Kleemann et al., 2008). Moreover, around the same time, some researches started drawing attention on the integration of consumer into the service provision and discussed the risks of it (Lovelock & Young, 1979).

However, it is not until recently, with the development of Internet technology, that crowdsourcing starts getting more attention and is becoming a prevalent phenomenon applied in many companies and industries (Kleemann et al., 2008). Among others, one of the most important prerequisites is the Web 2.0. As explained by its name, Web 2.0 is an advancement of Internet technology. Taken as a new way of communication, it goes beyond the conventional pattern of consisting just receivers as well as senders, where consumers only buy and use the product or service, but Web 2.0 allows more users to create content and add value during the production process. More importantly, it increases the interaction and collaboration opportunities between the users (Kleemann et al, 2008; Gatautis & Vitkauskaite, 2014). In short, Internet technology, on one hand, gives public possibility to get access to the tasks posted worldwide (Vukovic, 2009). On the other hand, it allows companies to operate and evaluate the

crowdsourcing ideas in a more convenient way. Therefore, regardless of people's location in the world, crowdsourcing can always connect talented people, and reach the most innovative ideas (Vukovic & Bartolini, 2010). In addition, with the support of the Internet, the effect of the collective wisdom can be amplified to influence more people on the global scale, and benefit for the profit-oriented companies (Afuah & Tucci, 2012; Bonabeau, 2009).

3.2 What Is Crowdsourcing: Definition(s) and Feature(s)

Crowdsourcing is still a quite new topic in the academic research; therefore different studies based on their own scenario give different definitions. In the eyes of Kleemann et al. (2008), crowdsourcing is in a change of corporate-consumer relations as well as a change in their social relations of production. It is in contrast to the company's conventional paradigm, where traditionally, manufacturers are devoted to understanding the customer's need, and prototype the activities, but in the crowdsourcing, customers are in the leading role to design or improve the product or service (Whitla, 2009). Estelles-Arolas & Gonzalez-Ladron-de-Guevara (2012) went through a large amount of research and found over forty different definitions of crowdsourcing. After the systematic analysis, they concluded Brabham (2008), Grier (2011), Howe (2008), Kleeman et al. (2008), Vukovic (2009) and Whitla (2009) as representatives in defining the crowdsourcing. The table below provides their definitions respectively:

Table 1 - Crowdsourcing Definitions

	Author(s) and year	Definition	Title	Page
1	Brabham (2008)	…A strategic model to attract an interested, motivated crowd of individuals capable of providing solutions superior in quality and quantity to those that even traditional forms of business can.	*Crowdsourcing as a model for problem solving: an introduction and cases*	79
2	Grier (2011)	… A way of using the internet to employ large numbers of dispersed workers. …An industry that's attempting to use human beings and machines in large production systems	*Not for all markets*	29
3	Howe (2008)	… The act of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large group of	*Crowdsourcing: how the power of the crowd is driving the future of business*	1

		people in the form of an open call		
4	Kleeman et al. (2008)	… A form of the integration of users or consumers in internal processes of value creation. The essence of crowdsourcing is the intentional mobilization for commercial exploitation of creative ideas and other forms of work performed by consumers	*Un (der) paid innovators: the commercial utilization of consumer work through crowdsourcing*	22
5	Vukovic (2009)	…New online distributed problem-solving and production model in which networked people collaborate to complete a task	*Crowdsourcing for enterprises*	1
6	Whitla (2009)	… A process of outsourcing of activities by a firm to an online community or crowd in the form of an 'open call'	*Crowdsourcing and its application in marketing*	15

As can be found from different definitions above, there are common grounds for these definitions of crowdsourcing. Estelles-Arolas & Gonzalez-Ladron-de-Guevara (2012, p. 12) concluded in their study that eight features of crowdsourcing activity should apply to all crowdsourcing situations:

1. "A clearly defined crowd"
2. "A clear crowdsourcing goal"
3. "The recompense by the crowd should be clear"
4. "The crowdsourcer is clearly identified"
5. "The benefit received by the crowdsourcer is clear"
6. "It is an online assigned participation process"
7. "It is in the form of the open call"
8. "It uses the internet to support"

When looking into the features of crowdsourcing it can be explained by two parts (Estelles-Arolas & Gonzalez-Ladron-de-Guevara, 2012). One is the 'crowd', the other is the 'sourcing'. For 'crowd', the generalized meaning accepted by most scholars is 'a group of individuals'. The reason of using it can be explained by the 'Diversity Trumps Ability Theorem', as a consequence of "a randomly selected collection of problem solvers outperforms a collection of the best individual problem solvers" (Howe, 2008, p. 5). What's more, crowdsourcing is organised in the form of an open call. People who could come up with a better solution can take

part in. So there is no restriction on the participation, all depends on the crowd's feeling towards the tasks and themselves (Estelles-Arolas & Gonzalez-Ladron-de-Guevara, 2012; Howe, 2006b; Gatautis & Vitkauskaite, 2014).

However, for some crowdsourcing activities, based on the different characteristics and the initiatives of it, specific groups are determined. For example, InnoCentive is an online platform for companies to tap into the crowd wisdom, and exchange their unsolved questions so they can receive a satisfaction solution. Based on the substantial skill and training it requires to enter this, the only people with knowledge about these problems choose to participate, hence at this moment a special group is formed, as well as a community.

Concerning the word 'sourcing', many factors need to take account. First of all, the content of the tasks that are undertaken by the crowd is thousands of the related issues that come up in the company's daily operation, which can be tied from the new idea creation to the operational activities (Estelles-Arolas & Gonzalez-Ladron-de-Guevara, 2012; Kleemann et al., 2008). However, all the tasks that companies outsource should be used for the purpose of commercial exploitation. In other words, companies can benefit themselves from it, either presented in the visible forms of profitability or their market shares increase, or in the invisible forms of improving brand awareness or brand reputation.

Second, the process and the form of crowdsourcing activities are vital to be qualified to solve the problem of the company, as it has a close relationship with whether the company can achieve its objectives. Cisco designs and evaluates the crowdsourcing activities from several basic criteria, to ensure that the solution that can solve the real problem (Franke, Von Hippel & Schreier, 2006). These include the time scope to implement the activity, the evaluation of the crowdsourcing towards company's ability to take action, and the last one is to take the long-term benefits into account (Hbrorg, 2009). Moreover, crowdsourcing platforms ensure that the process goes smoothly, and more importantly, that the company's efforts pay off. Vukvic (2009) stated a user-friendly platform helps to keep people interested in participation, and prevents the decrease of the idea submission in order to give a company a higher chance for collecting the valuable ideas that can be implemented. Here again in Cisco's example, its crowdsourcing platform 'Brightidea' allows people to complete the whole process in an easy way, which includes the sign-up, idea submission, to the comment and voting process (Hbrorg, 2009).

Besides, crowdsourcing is also in alignment with the philosophy of content marketing, as it creates the ongoing engagement of the corporate attitude, product value, and the social network all the time with people (Beard, 2013). The Customer's feelings are taken into the highest priority.

All in all, the definition of crowdsourcing in this study is focusing on any type of sourcing a task that used to be done internally. For example, the new product development (NPD), marketing campaigns or the sales forecasting etc. However, the more expansive broader of involving customers in activities like crowd funding or raising equity are not included as the crowdsourcing activity defined in this study.

3.3 What Is Crowdsourcing: Advantage

Howe (2006a) is considered as the first one who gave the definition of crowdsourcing in a business context. He described it as using the crowd's wisdom to solve the problem with lower costs. Two benefits can be indicated by his words. First is the **wisdom of the crowd**, it refers to the new business opportunity that a company could obtain from the crowd (Howe, 2008). For example, the crowdsourcing activity I-Prize held by Cisco systems, where there was a competition to find valuable business ideas for Cisco to make long-term investments (Hbrorg, 2009). The important lesson for Cisco is not only the innovative idea of the sensor-enabled smart electricity grid they got, but also they gained an insight on how the world thinks of them. It is especially useful for international companies, where crowdsourcing is a smart way to get access to the local markets and can better customize their products (Franke et al., 2006), also it can avoid some of the cultural biases. Moreover, the crowdsourcing ideas are also commercially attractive, in other words, to increase the company's profit. For instance, the top ten ideas generated from IBM's "innovation jam" activity became part of the 'IBM Smarter Planet agenda', and brought the company billions of US dollars of revenue (Ibmcom, 2016[3]). Bonabeau (2009) stated in the study that crowdsourcing is an appropriate way to gain a comprehensive understanding of the business demands as well as to give accurate responses. From the enormous of ideas submitted, companies can capture the future trends and focus on long-term planning, which gives them a competitive advantage in the hyper-competitive environment. Importantly, it also makes the problem easier to delineated and transmitted to the bigger market, which increases the viability of the idea implementation (Afuah & Tucci, 2012). Besides, for company, crowdsourcing is also useful to avoid decision maker's limitations by considering changes to their own position about products.

Another kind of benefit indicated from Howe's (2006a) statement is **cost efficiency**. Companies were said to have higher cost efficiency by obtaining the resources and information from a crowdsourcing activity (Shah, 2000; Vukovic, 2009). For example, Amazon's 'mechanical Turk', where most of the Human Intelligence Tasks (HIT) is paid less than US$1

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[3]Ibmcom. (2016). Retrieved May 23, 2016, from http://www-03.ibm.com/ibm/history/ibm100/us/en/icons/innovationjam/

while their ideas seem to have millions of business value (Whitla, 2009). While the reason for this is lying in Howe's explanation, it is because "such crowdsourcing applications generally require small investment of time and energy on the part of individual contributors" (Howe, 2008, p. 5). Usually, it is coming from the learning-by-doing, because it is easily for the user to indicate disadvantages and figure out the possibilities to improve it during the using process (Shah, 2000). Nevertheless, crowdsourcing is good for young start-ups; it helps people turning their business idea into action with lower cost and starts their first trying in the marketing (Estelles-Arolas & Gonzalez-Ladron-de-Guevara, 2012; Kleemann et al., 2008). However, some prior studies argued that it costs company much time and money on scanning the submitted idea, which is not worthy. To this point, Huang et al. (2014) give prove in their research, that by letting participants know more of the company's cost structure in the evaluation process and teaching the potential value of their idea, so low valuable ideas can be filtered out and the qualified ideas remaining.

Besides the advantages mentioned above, crowdsourcing could also **shorten the production cycle**. The additional information provided by the crowd may help a company to forecast problems they may face, so companies can try to avoid them beforehand. Similar for customer, getting them involved in the research and development stage, as well as the community communication in an early time, the pre-socialized feature gives customers a way to make their demands fit the market, and it is easier for people to accept the new product and make an expectation from it (Reichwald & Piller, 2006).

3.4 What Is Crowdsourcing: Categorization

There are a lot of different ways to categorize crowdsourcing. Afuah and Tucci (2012) divided it into two forms: **tournament-based crowdsourcing** and **collaboration-based crowdsourcing**. In the "tournament-based crowdsourcing", participants are competing with each other to win the nomination of the best idea, usually with a reward for compensating their ideas (Brabham, 2008). In the "collaboration-based crowdsourcing", companies collect user-generated content, and also use it to inspire more communication and collaboration between the participants. Examples in this area included Threadless, a company that sells the customer designed t-shirt; IStockphoto, a company uses customers uploaded photo as their primary source etc. However, horizontally looking, there are one-time contest or multiple-times contest (Bayus, 2013). The multiple-times contest is always performed in the "tournament-based crowdsourcing" format, like Dell's IdeaStorm or Starbucks' MyStarbucksIdea.

Another categorization of crowdsourcing is based on the function. Brabham (2013) categorized the crowdsourcing activities into **knowledge discovery & management** (to provide

with information and resources), **distributed human intelligence tasking** (processing the large dataset that is not easy for the computer to progress), **broadcast search** (complicated scientific or technical problems) and **peer-vetted creative production** (innovative ideas).

3.5 What Crowdsourcing Is Not

Several new types of organizations emerged in the business by the success of Internet communication technology. Although for some organizations, they are in the conditions of sharing the common characteristics, some characteristics are totally different from the crowdsourcing activity. Four community forms of organizations are online community, open source, mass customization and crowdsourcing.

The online community is defined as social collectives use varieties of tools or approaches towards solving the problem online (Hippel & Krogh, 2003). The special thing is that people in the community share the same interests. They communicate and collaborate online with each other (O'Mahony & Ferraro, 2007). It is a way of delivering knowledge and provides individuals with the opportunity to achieve their goals, or people are gathered to create and share the valuable goods or services.

Open source is developed in the software industry, based on the Internet community and people are voluntarily taking part in the software design to satisfy their organization or their own need (Hippel & Krogh, 2003). The size of the open source community can range from few to many millions; one of the well-known open source communities is the GNU/Linux operating system. The culture of the open source software allows people to freely exchange and modify the code and the software that are written by others. Moreover, there is a significant growing of the open source software projects that released in the commercial exploitation (Hippel & Krogh, 2003).

Mass customization is another term that may conflate with crowdsourcing. It allows customers to personalize their own product from the available features in the product development process. In addition, it takes advantage of the economics of scales; in the hope of creating new designing that attracts more people to purchase. However, while crowdsourcing is targeting at the unspecified target (Kleemann et al., 2008), mass customization is aiming to the people who is already identified as the customer.

The three concepts explained above are illustrated to compare with the concept of crowdsourcing, and drawn in the figure below to give a visual outline of the relationship between each other.

Figure 1 – Four Community Forms of Organizations Relevant to Crowdsourcing
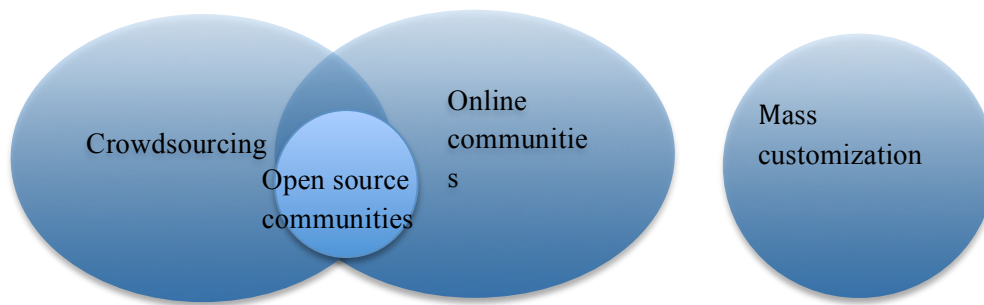
Source: Adapted from Borst (2010)

3.6 Crowdsourcing for marketing applications

Although the use of crowdsourcing in marketing has not been widely studied in academic research (Gatautis & Vitkauskaite, 2014; Whitla, 2009), there is some strong empirical evidence that can be seen from a number of pioneering companies. Similar to applying the principal of open source in the fields of software development, many functionalities crowdsourcing could undertake in the market application (Howe, 2006b). For instance, Audi Australia set up a campaign to invite people epitomizing the Australian landscape from their point of view. By using Q5 'hero' as footage, the campaign achieved a big success by collecting more than 150,000 microsite submissions, making more than 880,000 interactions with users, and creating a global widespread in the social media (Tyler Brockington, 2013[4]).

Whitla (2009) addressed that companies can collect new product development ideas from existing or potential customers. Another way to use crowdsourcing to their advantage lies in their ability to promote and advertise products or services, or use it to collect customer profiles for the purpose of marketing research. Von Hippel (2005) concluded in a wide range of industries, around 10 to 40 percent of the user firms and individual consumers said they are engaged in the product development or modification process (Von Hippel, 2005). The number is quite large when adding the total numbers of participating customer into the calculation. Although it is said consumers only contribute to the minor modification to the products or services, but the incremental improvement is responsible for the most technical progress and cost reduction (Von Hippel, 2005). In addition, Shah's (2000) research on consumer goods in the sports equipment branch found that innovative development of the product is largely done

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[4] Tyler Brockington. (2013, October 01). Holler's Land of quattro' competition for Audi Australia produces budding director Jem Downing. *Campaign Brief Australia*. Retrieved 18 May, 2016, from http://www.campaignbrief.com/2013/10/audi-announces-land-of-quattro.html

by the lead user, as they can get the first feeling of utilizing it, so feedback for company can help to improve the user experience and commercialize the benefits (Beard, 2013).

However, later on, crowdsourcing also spreads into other areas (Whitla, 2009). In the promotion and advertising, one of the important advantages is the widespread of reaching. Because user's experience is more persuasive than the company's slogan, so the strong word of mouth effect can not only attract the existing customers, but also target the potential customer (Vukovic, 2009). In IBM's example, the ''innovation Jam'' activity attracted more than 150,000 participants from 104 countries, the crowdsourcing activity gave IBM a good opportunity to promote and advertise IBM's century-long history and the value proposition in the socialization way (Ibmcom, 2016[5]). In addition, fresh eyes and insight may also contribute to new thinking and inspiration to capture more attention, and this is even happened to whom with no prior knowledge in that industry (Howe, 2006b).

Moreover, crowdsourcing can also be used for the purpose of market research; as running market prediction is one of the main applications in the information market indicated by Howe (2008). For example, in the Defense Advanced Research Projects Agency (DARPA)'s balloon hunt competition, an MIT team was the fastest team to finish the task and got $40,000 of prize. Their method was using crowdsourcing to recruit people providing the important clue, which took advantage of the technology and social network (Ideaconnection, 2016[6]). Another example is from the Hollywood Stock Exchange, they used crowdsourcing to get the feedback to forecast the movie revenue (Howe, 2008). The market needs are not static, so they seek the market trends that are necessary for companies who want to stay ahead in the industry. Additionally, the flexibility and adaptability of the crowdsourcing make it easier to apply in different marketing activities (Howe, 2006a). Besides, crowdsourcing is also working as the filter to organize the vast of information; companies can use the voting mechanism to figure out the most valuable information to direct their developing. What's more, crowdsourcing is also used for collecting competitor information (Whitla, 2009).

3.7 The motivation of participating crowdsourcing

Bayus (2013) found in the study that the diversity of backgrounds could contribute to the valuable ideas that companies can implement. Therefore, it is important to detect and measure people's incentives for participating in the crowdsourcing activity. A lot of studies focused on

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[5] Ibmcom. (2016). *Ibmcom*. Retrieved 23 May, 2016, from http://www-03.ibm.com/ibm/history/ibm100/us/en/icons/innovationjam/.

[6] Ideaconnectioncom. (2016). Retrieved 23 May, 2016, from https://www.ideaconnection.com/open-innovation-success/Crowdsourcing-Goes-Up-in-the-World-DARPA-Balloon-Hunt-00318.html

the topic of studying people's motivation, in the psychological perspectives as well as the practical perspectives.

Crowdsourcing is assumed to provide amateurs with the opportunity to contribute themselves in some professional areas to achieve their self-satisfaction (Bonabeau, 2009). So people are nowadays more willing to invest their time and energy in the challenge things they value for. Ryan & Deci (2000) addressed in the cognitive evaluation theory (CET) that there are two types of motivations, *intrinsic motivation* and *extrinsic motivation*. In the intrinsic motivation, people are inherently motivated to satisfy their psychological needs from three elements, competence, autonomy and relatedness. Seen from the psychological perspective, the phenomenon can be explained from Maslow's hierarchy of need theory (Wahba & Bridwell, 1976), where people are intending to reach the higher level in the motivation pyramid; it is the achievement of the self-actualization and self-esteem. Competence is one of the most salient factors that stimulate intrinsic motivation; it reflects one's expected ability they need. It has also been confirmed in the crowdsourcing study, that people with past success experience are more intending to participate, as a consequence of their competence can be proven from success. Autonomy is considered as one's initiative control in deciding their behaviour. Social relatedness is the feeling of belongings that people are seeking for (Baumeister & Leary, 1995). It is playing an important role in giving people a sense of attachment, which people need for socialization and the integration with each other. In contrast, *extrinsic motivation* means that people are encouraged to pursue a certain activity by the possibility of receiving awards or avoiding punishment as a consequence of their participation. The monetary rewards motivation happens mostly to the "tournament-based crowdsourcing" format, where people are competing for a large amount of rewards.

Therefore, all things mentioned above make it worth to further study what motivation can be transferred to psychological feeling and guide people's behavioural intention.

3.8 The limitation of Crowdsourcing

Although there are a lot of benefits provided by the crowdsourcing, several limitations also exist. First is concerning the suitable amount of monetary compensation for exchanging the idea. It is stated in the prior study that crowdsourcing is turning the customer into the "working consumer" (Kleemann et al., 2008). So some researchers said the monetary return offered by companies is far less than it is worth. Another limitation is the risk of losing control; there is a large debate on deciding what is the optimal balance giving to each side, on the one hand, protects the ownership of the idea contributors, on the other hand, to ensure companies can take full use of it in the business operation (Kleemann et al., 2008).

4 Theory and Hypotheses

4.1 Conceptual Framework

Figure 2 – Conceptual Framework
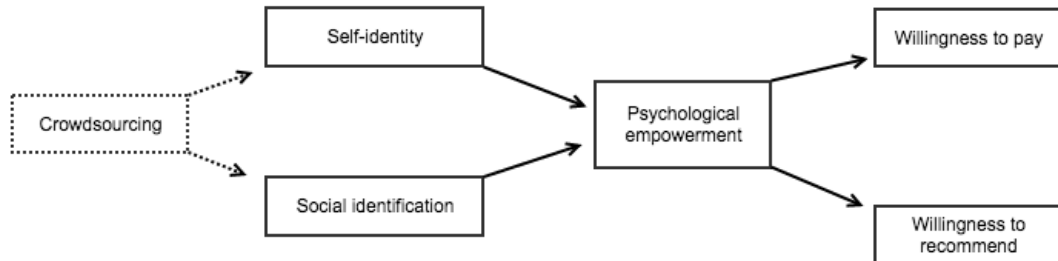
From the conceptual framework figure above, it illustrates that crowdsourcing triggers self-identity and social identification mechanisms that, in turn, lead to psychological empowerment, which has positive benefits for the Brand such as willingness to pay (WTP) and willingness to recommend (WTR).

4.2 Independent variables: Self-identity account and social identification

4.2.1 Self-identity

Self-identity is a psychological attitude consumers may develop towards a brand whereby they feel that such brand meets their psychological needs (Keller, 2001). In the self-identity account stream, we can identify several important studies. For instance, Keller (2001) argued that self-identity, together with self-respect, are important feelings that "occur when the brand makes the consumer feel better about themselves" (p. 14). It builds the feeling that connects people's perception towards themselves with the brand as well as the product. So when people gain a sense of satisfaction or accomplishment, the self-identity feeling can be evoked. This may lead to the positive attitude towards their behavioural intention. Moreover, Smith et al. (2007) also addressed that self-identity is playing an important role in determining one' intention and behaviour (Smith et al., 2007).

Self-identity is a personal phenomenon. Keller (2001) explained it in more detail with the Customer-based Brand Equity Pyramid (CBBE) (Figure 3), which is to answer how does the self-identity formed in the process of brand equity building, and how does it leads a move upwards in the pyramid. The CBBE model is considered as the bridge connecting people's

cognition towards the brand. There are four steps: brand identity, brand meaning, brand responses and brand relationship, and they are displayed in 6 brand-building blocks. The goal of the CBBE model is to reach the brand resonance. However, it is in the sequence steps to the top, and the reach of each step depends on the complement of previous one. Importantly, the power of self-identity is lying in the customer response towards the brand, more specifically, from what people have learned, experienced and felt from the brand, when customers have positive judgment and feeling, the emotional feelings of self-identity can be fulfilled, among other feelings are warmth, fun, excitement, security, social approval. As discussed before, self-identity translates into consumers feeling that a certain brand meets their psychological needs (Keller, 2001). What's more, it leads to reach the final step of building a long-term relationship (see Figure 3), there, company gains a host of benefits, for example, competitive marketing actions, larger margins or the increased marketing communication effectiveness etc.

Figure 3 - Customer-based Brand Equity Pyramid (CBBE)
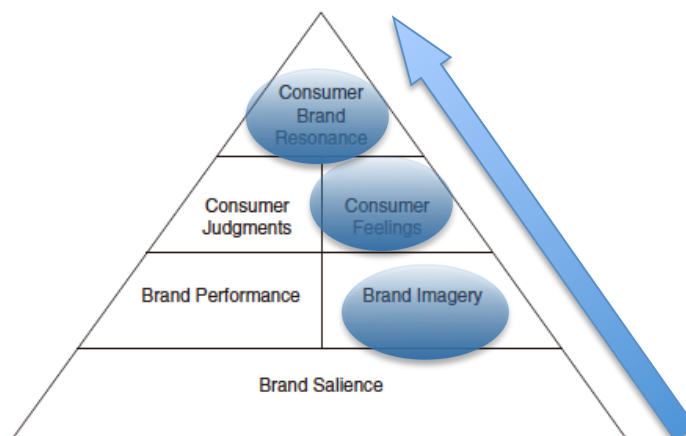
Based on the literature just reviewed, I argue that crowdsourcing can strengthen the effective of self-identity and displayed in all four steps from the CBBE model. In the first step, the crowdsourcing activity creates awareness to public. By the support of the Internet, it reaches a broad of audiences' attention, so the big influence later on can leave a significant impact on their self-perception. In the second step, crowdsourcing is playing a function in delivering the value of activity and brand, which can also be considered as the participants' motivation. After the favourability has been built, in the third step, the positive feeling is created and being associated with their own experience and perception. However, if at this point, people are provided with the opportunity to get more involvement with the company and contribute their idea, the self-identity feeling is expected to strengthen. Also, the close relation with company

leads to the upward movement to the brand resonance in the CBBE model, which may have influence on their future behaviour.

Therefore, by participating in crowdsourcing, people cannot only gain opportunities to know the company's offers and customer-oriented products, but also obtain a high sense of identity towards the brand. In this study, it is going to figure out how the self-identity contributes to the people's behavioural intention in terms of the willingness to pay and willingness to recommend. This account suggests the following process through which crowdsourcing benefits a brand:

> *H1: Participation in crowdsourcing initiatives enhances consumers' self-identification with the brand.*

4.2.2 Social identification account

The psychological feeling can also be strengthened by the social identification, which can be defined as the extent to which the consumer feels connected and identifies with the group of people that typically uses that same brand. The academic definition of social identity was mentioned by Tajfel (1978), "that part of an individual's self-concept which derives from his knowledge of his membership in a social group (or groups) together with the value and emotional significance attached to that membership" (p. 63). Ryan & Deci (2000) stated that the social relatedness is one of the three important psychological needs that optimize people's social development as well as the personal well-being. Keller (2001) also discussed social approval, which "occurs when the brand results in consumers' feeling positively about the reactions of others to them" (p. 14). In other words, the social identification account is the recognition gained from other people and society that brings people with the emotional satisfaction of belongings. However, it is presented in the form of the group, where people share the common characteristics and pursue the same value. For example, it can be presented as a sense of belongings or social approval or acceptance.

The social identification occurs to increases their commitment to the group, as well as the strong attraction to the brand, which increases the level of gravity of people's cognition and behaviour (Stets & Burke, 2000). Stats & Burke (2000) also addressed that identity is formed through the process of the self-categorization, which is the reflection of itself from the classification. In the theory of social identity, it is said as a phenomenon of depersonalization, where people find value and satisfaction from the involvement, and result in the intrinsically increase of the self-esteem (Abrams & Hogg, 1990). However, the feeling of social identification is functioning psychologically, and can be activated from the accomplishment in the social group, which in this case is the crowdsourcing participation (Stets & Burke, 2000).

Dahl et al. (2014) built their study on the social identity theory. By empowering customers with the ability to get involved in the company's new product development, for instance, to design, select or vote their preferred product to market, it gives them the perception that the company is user-driven. However, if people who do not perceive themselves in the same group as those people who engaged in the user-driven activity, the effect of the empowerment feeling is attenuated, and they also do not perceive the company as a user-driven company. Hence, the social identity account is an important factor in building people's empowerment feeling. Moreover, the customer-oriented feeling is also working to the nonparticipants; this means that although they don't participant in the activity, but by observing the company gives other customers more authority, they can also gain the empowerment feeling. This is as a consequence of them identifying themselves in the same group as the customers who participant, and the power company gives can also be delivered into their cognition. So, the social identification is also a significant factor in influencing people's behaviour.

In this case, crowdsourcing increases the opportunity for people to communicate and collaborate in the group or community, so it creates the opportunity to find and feel the sense of belongings. However, it is said the building of social identity accounts shapes people's preference and behaviour, and lead to a positive outcome, the profit (Dahl et al., 2014). Therefore, this account suggests the following process through which crowdsourcing benefits a brand:

> *H2: Participation in crowdsourcing initiatives enhances consumers' social identification account with the brand.*

4.3 Dependent variables: willingness to pay and willingness to recommend

Based on the conceptual framework above, the dependent variables in this study are willingness to pay and willingness to recommend.

Willingness to pay refers to people's acceptance of products or services. In this case, it is whether people are willing to exchange products or services by the compensation of money. When people have a high willingness to pay, they are considered as a potential customer who can contribute to the company's profit increase (Shogren, Shin, Hayes & Kliebenstein, 1994).

However, the willingness to recommend is "the percentage of customers who were enthusiastic enough to refer a friend or colleague" (Reichheld, 2003, p. 3), it has a positive relation with people's satisfaction towards the products or services, as well as indicated as a sign of loyalty (Caroll & Ahuvis, 2006). Willingness to recommend is the extension of the emotion attachment of people's favourability to the brand, and it is regarded as the prediction of

the user's interests, and integrates the brand into people's sense of identity (Caroll & Ahuvis, 2006). Moreover, the word-of-mouth effect, which has a similar meaning with the willingness to recommend, has a higher possibility of triggering out people's post-consumption behaviours.

In this study, it is aiming to explore the customer's attitude-behaviour relationship in the context of crowdsourcing activity. This suggests the following hypothesizes:

> *H3 a: The self-identity and social identification generated from the crowdsourcing has a positive relation with people's willingness to pay.*

> *H3 b: The self-identity and social identification generated from the crowdsourcing has a positive relation with people's willingness to recommend.*

4.4 The mediator effect of psychological empowerment

Spreitzer (1995) defined the concept of psychological empowerment in a psychological perspective. According to his definition, psychological empowerment means the increased motivation added intrinsically towards a task or activity. Especially, it strengthens people's cognitive state by increasing their self-satisfaction and confidence, which in turn guides their action (Menon 1999). It is stated that psychological empowerment became popular due to globalization, where innovation and competitive advantage are required for a company's growing (Drucker, 1988). What's more, psychological empowerment shapes how people see themselves in respect to the activity, and can be reflected from competence, self-determination and social impact (Spreitzer, 1995). Prior research, looking at it in a work related environment, showed that psychological empowerment is shaped by the specific context of the people that are involved and their personality, and in turn motivates their behaviour (Spreitzer, 1995). Therefore, in the case of crowdsourcing, psychological empowerment is considered as an initiative where people feel that they own, a sense of value perceived by them, where it has the potential to drive people to proactively take responsibility towards the brand (Ashforth, 1989). Dahl et al. (2014) also stated that customer empowerment can make an effect and build relationships regarding the perception towards the company, and resulted in the loyalty building as well as the word of mouth effect. Psychological empowerment is also considered as developing the possession feeling towards the object (Van Dyne & Pierce, 2004)

However, as stated by social identity theory, self-identity and social identification are expected to have an effect on people's behavioural intention. Where self-identity, on the one hand, is forming the personal-concept, and how they view themselves in terms of self-enhancement. Social identification account, on the other hand, acts as attachment feeling that can be obtained from the social group (Luhtanen & Crocker, 1992). However, as discussed

above, the psychological empowerment is considered as a factor showing people's gaining of self-perception, and which in turn has an impact on controlling the intensity of behavioural intention. Therefore, it is expected to have influence on the underlying mechanism between the independent variables and dependent variables. In the case of crowdsourcing, through the gaining of psychological empowerment, the relation between the self-identity and social identification with the WTP and WTR can be influenced by it, which suggests taking a look at the mediator power of psychological empowerment. This suggests the following hypothesizes:

H4 a: The influence of people's self-identity and social identification from crowdsourcing on WTP is mediated by the psychological empowerment.

H4 b: The influence of people's self-identity and social identification from crowdsourcing on WTR is mediated by the psychological empowerment.

Below, it is the summary of all hypotheses:

Table 2 – Hypotheses Summary

H1	Participation in crowdsourcing initiatives enhances consumers' self-identification with the brand.
H2	Participation in crowdsourcing initiatives enhances consumers' social identification account with the brand.
H3 a	The self-identity and social identification generated from the crowdsourcing has a positive relation with people's willingness to pay.
H3 b	The self-identity and social identification generated from the crowdsourcing has a positive relation with people's willingness to recommend.
H4 a	The influence of people's self-identity and social identification from crowdsourcing on WTP is mediated by the psychological empowerment.
H4 b	The influence of people's self-identity and social identification from crowdsourcing on WTR is mediated by the psychological empowerment.

5   Research Methodology

In this chapter, the methodology used in this study is presented. They are based on the theoretical and conceptual framework developed in the last chapter. First, the research design is discussed to illustrate the approach and technique applied in this study. Second, the hypotheses outlined before is transferred into constructs and measurements. Finally, I discuss the sampling and implementation procedures I used to ensure the reliability and validity of the data.

5.1 Research design

The purpose of this study is to examine the process through which participation in crowdsourcing influences customers' willingness-to-pay and willingness-to-recommend a certain brand. For this reason, I designed a research approach that allows me to understand how the self-identity and social identification of customers participating in crowdsourcing events influence the psychological empowerment they gain from participating in crowdsourcing which ultimately impacts their behavioural intentions towards the brand (i.e. willingness-to-pay and willingness-to-recommend the brand).

Because of a lack of archival data, I used survey-based techniques to measure the constructs in my model and examine the relationships among them. It is said that *"survey techniques are based upon the use of structured questionnaires given to a sample of a population"* (Malhotra & Birks, 2007, p. 265). Therefore, in order to describe people's psychological attitude and personality displaying in the crowdsourcing context, an online survey is considered as the most appropriate technique to use (Malhotra & Birks, 2007). One advantage is that the structure and choices of the survey reduce the variation of answers caused by different interviewers, and this makes it easier to administrate and analyse. Besides, the use of online surveys also provides flexibility to get access to a broad range of people.

I relied on a key informant approach to collect data for this research. The approach is considered as an appropriate method to generalize the patterns of people's behaviour from either actual or prescribed relation (Homburg, Klarmann, Reimann & Schilke, 2012). To be specific to this case, although some people may never have participated in a crowdsourcing activity or they have not yet considered participating in one, by applying the key informant approach, they are qualified for participation in my survey. The key assumption I make is that even if they have not participated themselves in crowdsourcing, given the popularity and generalized usage of crowdsourcing nowadays, it is highly likely that at least some of the respondents have heard about crowdsourcing and may even know someone who has participated. Thus, by placing those respondents in the context of those who do participate in crowdsourcing activities, one can use a

key informant approach to collect valid and reliable data on the effects of participation in crowdsourcing activities. The situation is, in a way, similar to asking managers in companies how certain decisions are made. For instance, you may ask respondents to report about the culture of the firm and senior management behaviours. Even if the respondent is not a senior manager herself or himself, she or he is exposed to senior managers' behaviours and thus able to inform researchers about senior managers' behaviours at her or his firm (for more on key informant methodology see Homburg et al., 2012).

In order for the key informant approach to be reliable, it is fundamental that the focal activity (in my case a crowdsourcing contest) is salient in the respondent's memory. Homburg et al. (2012) addressed that challenging by asking participants about their present feelings towards the focal activity and ensuring the salience of such activity or event, which makes it easier for respondents to remember their personal feeling properly, and ensure the reliability of the constructs from such a key informant approach. There is however also a key limitation: this is the selection problem. It is stated by Kumar, Stern and Anderson (1993) that there may be response error occurring to people who are not closely associated with the undergoing situation. Therefore, in future research, it is expected to avoid such limitation by reaching more resources. For example, by following an undergoing crowdsourcing activity and investigating people who participate in it.

However, there is one restriction for participation and this is whether they have heard about crowdsourcing. Therefore, the first question asked to filter out participants that have never heard about crowdsourcing. They are dropped from the survey, and those participants who are needed will proceed to the next part of the survey.

In order to ensure the accuracy of the response and to avoid systematic errors, the simulation that was used in this survey places the participant in a crowdsourcing contest organized by their own mobile phone company. There are several reasons for choosing the mobile phone as the example in this survey. Firstly, because the generalized usage of the mobile phone, it provides an opportunity to get a better investigation and get first-hand data more easily. Secondly, by using the participants' own phone brand, it is expected that because all people have certain preference to their phone, so the bias caused by the dislike to a specific brand can be avoided, which means that this method can better indicate people's behavioural intention. Thirdly, the use of mobile phone brand can also provide a potential social group consisting of people who use the same brand of mobile phone.

5.2 Measurements

The measurements of each construct are discussed below (see also Appendix 1 and Appendix 2 for the full instrument). In order to gather a big amount of data to test the hypotheses and make it valid, multiple items were used for testing each construct. In total, there are 24 items included that belong to 6 categories. To motivate people and ensure the response rate, the survey took approximately 5~10 minutes to finish. The clarification of each construct is discussed in detail below. The summary of constructs and measurements is present in appendix 2.

5.2.1   Independent variables measurement

Self-identity

Self-identity is aiming to test the hypothesis 1, which is to describe people's self-perception of their capability and self-esteem. In order to measure people's worthiness and attitude in crowdsourcing activity, Pierce, Gardner, Cummings & Dunham's (1989) construct of "organization-based self-esteem" (OBSE) was adopted, where three items come from it. OBSE is appropriate to this study, because it focuses on measuring people's gaining of self-esteem in the organization-related activity. It is concluded that the high level of self-identity can be seen from four factors of important, meaningful, effectual and worthwhile (Pierce et al., 1989). In addition, one item was adopted from Carroll and Ahuvis's (2006) study of measuring the levels of self-expressive. In total, four items available to test for this study, which is by asking whether they think they can add value, make a difference or taken seriously from the crowdsourcing contest organized by their phone company.

Social identification

The measurement of social identification is aiming to test hypothesis 2, by asking participants to indicate the level of social identification they obtain from their involvement with the social group formed by their mobile phone company. Luhtanen & Crocker's (1992) constructs of 'collective self-esteem scales' were used to assess it. The advantage is that the constructs are not only limited to one specific group, for example, the gender group or religion group, but that it can also form based on the common interests. So in this case, it is expected to test people's perception of social identification gaining from the group that using the same mobile phone brand. Five items are included in the survey based on four dimensions, membership, public, private and identity, and they are expected to test people's insight of their relevance, socialization, preference and association with the social group.

5.2.2 Dependent Variables measurement

Willingness to pay

The willingness to pay is used to test hypothesis 3a. Although it is difficult to measure, the use of mobile phone as the example in the survey makes it specified and easier to test. This study is built on the assumption that WTP is based on the gaining of higher level of self-identity and social identification. In other words, people with a higher level of self-identity and social identification shows a higher demand for the product or service from the company than the people without these kinds of feelings (Fuchs et al., 2010; Reynolds & Beatty, 1999). Therefore, by measuring it in terms of WTP from different aspects, there are 4 items included as suggested by Fuchs et al.'s study. Particular, from people's willingness to buy the same product, other related products from the same brand, or their preference to the brand of their phone company compared with other brands. In this case, willingness to pay targets at investigating whether people are willingness to pay for the product or service from participating in the crowdsourcing activity organized by the phone company.

Willingness to recommend

Another important post-consumption behaviour is the willingness to recommend, which is used to test hypothesis 3b, measuring the extent of people's willingness to praise the brand to others. Caroll and Ahuvis' (2006) constructs and measurements were adopted in this study, and it is measured by the word of mouth effect. Four items are included to test from different dimensions, (1) their willingness to recommend the crowdsourcing contest to their friends or family, (2) the possibility to mention it in their conversation, (3) the willingness to use it in their social media posting, and (4) the possibility that repost news on their social network. So in this case, willingness to recommend targets at investigating whether people are willingness to recommend for the product or service from participating in the crowdsourcing activity organized by the phone company.

5.2.3 Measurement of the mediating variable

Psychological empowerment is used to test the hypothesis 4a and 4b. In order to ensure the reliability of measurement, the constructs were adopted from Spreitzer's (1996) psychological empowerment measurements. This provides a good examination of the relationship between individual's social structures with psychological empowerment. Besides, Van Dyne and Perce's (2004) construct was also used to strengthen it. It is measured from four dimensions; they are meaning, competence, self-determination and impact. All of them contribute to people's perception towards their psychological empowerment gaining. In the survey, participants are

asked to describe their agreement on how meaningful, valuable, and influential they consider involvement in a crowdsourcing contest to be.

5.2.4 Additional measurements

In addition, the demographic information regarding *age*, *gender* and *education levels* are also included at the end of the survey. Prior studies showed that these demographic elements have a relationship when it comes to the empowerment of people (Van Dyne & LePine, 1998). For example, it is said that older people experience a slower change in feeling empowerment from taking part in activities than younger people. Well-educated people are said to gain a feeling of competence faster than less- educated people. Therefore, these levels of age, gender and education are used as control variables to provide additional information on the generalization of study.

5.2.5 Questionnaire and Applied Multi-Item Scale

As mentioned before, an online survey was used to conduct the measurements for this research. The use of survey-based research is also considered as the cross-sectional research, because it measures each individual at a single point of time (Rindfleisch, Malter, Ganesan & Moorman, 2008). So in order to reduce the common method variance (CMV) that is caused by the single rate happening during the measurement procedure, and prove the validity of this survey, different response scales were adopted depends on the questions, because they fitted better with the questions (Rindfleisch et al., 2008). For the self-identity, social identification, psychological empowerment and willingness to recommend, 5 points Likert-type scale was applied to score participants' different level of agreement to the statements (1=strongly disagree, 5=strongly agree), to the willingness to pay construct, 5 points likelihood scale was used to test the different level of likelihood of doing it as said in the statement (1=very unlikely, 5=very likely). The questionnaire is presented in the appendix 2 to give a more detailed illustration. Thus, by minimum the CMV in the survey design process, it ensures the validity of the measurements.

5.3 Sampling and Procedure

In order to reach the target respondents, which in this case are people that use mobile phones, and avoid having certain groups under- or over- represented, the survey was distributed online. For convenience, I used a 'snowballing' approach to gather my data. Email and social networks were the main channels for delivering it. To be specific, Facebook and WeChat were used to send out the survey in an effective way, and those respondents were also recommended

to deliver the survey to more people. All procedures were conducted online, so there was no personal instruction, which is to avoid the participants' decision bias caused by personal indication.

The survey platform of Qualtrics was used to design the survey. After the completion of the survey, a pre-test was done by four people to make sure everything was understandable, as well as a clear understanding of the instruction about what they were asked to in the survey. Then the survey was launched and an anonymous link was sent out to people in order to collect data. However, to guarantee the accurate of data, participants were less informed about the testing content of self-identity and social identification (Malhotra & Birks, 2007). The data collection procedure lasted for around one week, and there were a total of 411 respondents that filled in the survey.

5.4 Method of Analysis

The objective of this study is to examine the effect of psychological feelings gained from crowdsourcing activity on people's behavioural intention. Based on the research design and the data collected, the analysis method was discussed. First, I used Cronbach's alpha to ensure the reliability of my measures. I examined the coefficient alpha to test the reliability of all multi-item scales for each construct. Confirmatory factor analysis (CFA) was also applied for the study to ensure the validity of measurement, which is emphasizing on examining the discriminant and convergent validity. Second, In order to test if self-identity and social identification feelings can be triggered out from crowdsourcing activity, this research used the independent samples t-tests, and linear regression. Moreover, in line with the conceptual framework, psychological empowerment is considered as the mediator towards people's behavioural intention. Therefore, three parts of analysis are included to measure it. The first part looks at the most distant antecedent factors of self-identity and social identification, and its effect on WTP and WTR. Second, I tested whether independent variables can influence psychological empowerment (a condition for meditation to exist). Finally, the relationship between psychological empowerment and the dependent variables of WTP and WTR are examined (to establish if full, partial or no mediation exists).

6 Data Analysis and Results

In this chapter, the detail analysis is conducted and the results are present. First, the data description is given to provide a clear review of the collected data. Then, it followed by the preliminary analysis of the factor analysis, which transforms the data into analysis form. After it, the analysis for testing each hypothesis is performed by using the software of SPSS and AMOS. At last, the result towards each hypothesis is answered and the research question is reported.

6.1 Sample

Mobile phone was used as the framework to develop the survey in this study. There are in total of 411 respondents that joined the online survey. However, only 222 respondents answered the whole questions. Moreover, based on the purpose of this study, people who has never heard of crowdsourcing is not qualified to this research, so they are dropped out from the sample. Therefore, after filtering all the prerequisite condition, there are 147 respondents left that provided with the validate answer. The response rate that describes "the percentage of the total attempted interviews that are completed" (Malhotra & Birks, 2007, p. 279) is 55.96%, which is in the average level.

Descriptive analysis is given to provide the insight of data variation. Concerning the construct data, it is noted that all items based on two types of questions are coded on a 5-point Likert scale (1=strongly disagree, 5=strongly agree; 1=very unlikely, 7=very likely), and there are in total five predefined constructs that are corresponding to all the items measured in the survey. Each construct was measured from different dimensions, and in this case, there are 4 or 5 items included for each measurement to test respondents' attitude towards the specific concept. However, it is important to reduce the amount of items and determine the factor score of each construct in the analysis process. Therefore, Factor analysis was performed.

In SPSS, the 'Bartlett's test of sphericity' and 'anti-image correlation matric' were applied to provide support to the meaningful use of factor analysis. Moreover, three assumptions were examined. The first assumption is concerning the measurement levels. Likert scale was used in this study, because it has the assumption of 'equal appearing intervals' (Janssens, De Pelsmacker & Van Kenhove, 2008, p. 255), so it is considered as the interval-scaled variables in most cases. Second, because all items use the 5-points Likert scales, so the measurement levels are considered as identical. Third, there are 147 data recorded for this study, so it meets the minimum of 100 respondents to conduct the principal component analysis (PCA).

In addition, in order to ensure the reliability and validity of the analysis, Cronbach's alpha was conducted to evaluate the internal consistency for each measurement. It is used to examine

the construct with at least three items, and to test how close the multiple items are related to each other. Moreover, measuring Cronbach's alpha is also a necessary step to do before calculating the summated scale for each factor. The following table illustrates the result of Cronbach's alpha for each construct.

Table 3 – Cronbach's Alpha

Construct	Cronbach's Alpha
Self-identity	.757
Social identification	.739
Psychological empowerment	.741
Willingness to pay	.788
Willingness to recommend	.744

As can be seen from the output (appendix 3), all of the five measurements have the alpha coefficients between 0.6 to 0.8, suggesting that all of them have a relatively high internal consistency, which also imply the result is reliable and can be accepted. So based on the five predetermined constructs, the next step is to calculate the summated scale in SPSS for each construct. The mean was used to typify the respective measurements, and five new columns were created in SPSS statistics data editor. The score is from 1 to 5 in which higher score refers to a high level of agreement or likelihood, while lower score indicates a low level of agreement or likelihood. The table below is displaying the important characteristics of the 5 measurements in detail.

Table 4 - Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Self-identity	147	3.38	.76	1.00	5.00
Social identification	147	3.55	.66	1.00	5.00
Psychological empowerment	147	3.50	.73	1.00	5.00
WTP	147	3.56	.85	1.00	5.00

WTR	147	3.46	.76	1.00	5.00
Valid N (listwise)	147			1.00	5.00

Looking from standardized variables, WTP showed the highest mean, suggesting that people are generally more likely to act in WTP. However, it also showed a relatively high dispersion rate, meaning there is a quite different opinion towards the behaviour of WTP among all respondents. On the contrary, social identification has the lowest standard deviation, showing a generally high sense of identity in social identification by respondents from crowdsourcing activity. Moreover, self-identity showed the lowest mean, suggesting that it has the lowest sense of identity among respondents.

Concerning the demographic information, the coding is shown in the table below.

Table 5 – Coding for Control Variables

Variable name	Description/Coding
Gender	Female (1), Male (0)
Age	<20 y (1), 20-34 y (2), >34 y (3)
Education	High school or below (1), Bachelor (2), Master, Doctor or above (3)

Of the total sample, female respondent takes up 68.7% of proportion, while the other 31.3% of proportion are male respondent, implying that female respondent is dominated in the dataset. This may as a consequence of the unbalance reach to female and male respondents, or it may because that female is more likely to take part in the crowdsourcing activity and take time to fill in the survey. However, as indicated from the analysis below that gender has no significant association with the dependent variables (WTP and WTR). So, the unbalanced female and male proportion does not bias the result. Moreover, the age distribution is illustrated in the histogram figure (4) below, there are 5.4% respondents that are under 20 years old, 73.5% respondents are aged ranging from 20 to 34, and 21.1% people are over 34 years old. After consideration, it could be explained from easy access to the people age ranged from 20 to 34, as well as they are the most activate online users. In addition, as can be seen from the pie chart (figure 5) in showing the education level, four education levels are indicated. There are only 12.9% people in 'high school or below' degree, while people with 'bachelor' and 'master' degree occupied 41.5%

and 40.82% respectively, and people with 'doctor or above' degree is in 4.76% of proportion. So, it is concluded that most respondents joined this survey have a secondary education level.

Figure 4 - Histogram for Age	Figure 5 – Pie Chart for Education
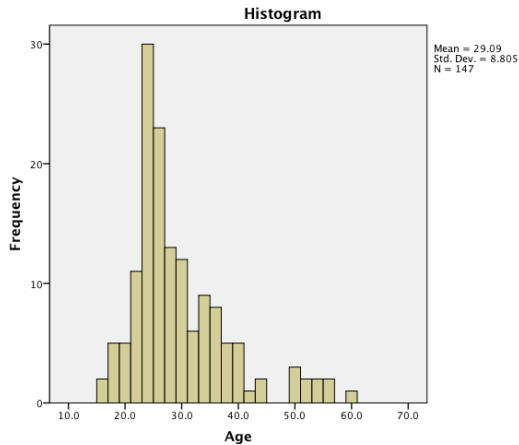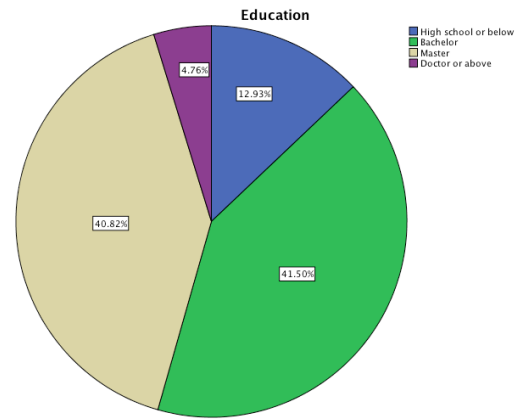
6.2 The influence of crowdsourcing participation on people's self-identity and social identification

From the theoretical framework developed above, if my expectations hold true, it is expected that participation in the crowdsourcing activity could enhance people's self-identity and social identification. So in this section, it is attempting to test the existence of participation effect and the relation behind it. It was measured by the question of **"have you ever participated in a contest similar to the one described here"**, to compare between the people who have previous crowdsourcing participation experience with those who don't. Please recall that my measures of self-identity and social identification refer to the extent to which the respondent believes that participants in a crowdsourcing initiative do so because they expect their self-identity and social identification to increase (note that the stem of all items in these scales start with "I feel that customers who participate in crowdsourcing contests do so because…", see Appendix 2). Therefore, my key assumption here is that if the participation effect exists, those who have participated in such a contest would agree more strongly with items indicating an increase of self-identity and social identification. In other words, if hypotheses 1 and 2 hold, there would be a difference in the perception of self-identity and social identification from the two different groups of people being compared: those who have and those who have never participated in a crowdsourcing initiative.

Regression analysis was performed in SPSS, and the output (appendix 4) was generated. The results do not support my hypotheses H1 and H2. Both self-identity (t = -1.455, p = .148)

and social identification (t = - .028, *p* = .411) are not significantly related to the participation factor, which results there is no impact on people's indication of their self-identity and social identification from whether or not they have participated before. In other words, self-identity and social identification could not be enhanced from crowdsourcing participation, and there is no cumulative effect on people's self-perception evaluation. Nevertheless, it provides evidence for choosing the analysis method for the following analysis where that is not biased by the distinction between two types of people. Therefore, **H1 and H2 are rejected.**

6.3 The impact of self-identity and social identification on WTP and WTR

In order to gain insight about the correlation between independent variables (self-identity and social identification) and dependent variables (WTP and WTR), regression was performed in SPSS, which is in corresponding to the hypothesis 3a and 3b, to explore whether there is an impact of self-identity and social identification on WTP and WTR. In other words, could the higher levels of self-identity or social identification perceived by people be transferred into their willingness to pay or willingness to recommend?

Two analyses are given respectively based on the two different dependent variables of WTP and WTR. In each analysis, self-identity, social identification, as well as other control variables (gender, age, and education level) are being used as predictors, while WTP and WTR are used as the criterion variables.

WTP:

The linear regression model to measure WTP is expressed as follows:

$$WTP = b_0 + b_1 Self\ identity + b_2 Social\ identification + b_3 Female + b_4 Age + b_5 Edu1 + b_6 Edu2 + \varepsilon$$

Where WTP=dependent variable; bi=parameter to be estimated, coefficient; Self-identity/ Social identification/ Female/Age/Edu1/ Edu2=independent variable; ε = disturbance term.

Table 6 – Coefficients[a] for WTP

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF

1	(Constant)	1.090	.443		2.459	.015		
	Self-identity	.333	.097	.297	3.426	.001	.652	1.534
	Social identification	.424	.113	.330	3.734	.000	.626	1.597
	Gender	.075	.134	.041	.562	.575	.923	1.083
	Age	-.007	.007	-.074	-1.042	.299	.964	1.038
	Education1	.096	.199	.038	.484	.629	.791	1.263
	Education2	-.018	.128	-.010	-.140	.889	.885	1.130

a. Dependent Variable: WTP

From the SPSS output, it could be observed that self-identity has a significant association with people's WTP (*p*= .001), meaning people with increasing self-identity are showing a higher likelihood of WTP. To be specific, one unit increase of self-identity could lead to an increase of .333 units of WTP. Similarity, social identification and WTP are also observed to be significantly related (*p*= .000). It is indicated that people with a high level of social identification gained from crowdsourcing are also showing a higher likelihood in WTP, where one unit increase of social identification leads to .424 unit increase of WTP. Furthermore, age, gender and education level are suggested to be insignificant with WTP (*p*= .575, *p*= .299, *p*= .629, *p*= .889). However, from the practical perspective, the self-identity and social identification can be served as two sources that contribute to one's behavioural intention. The self-identity, at the one hand, influences WTP by strengthening one's inner attitude and perception. The social identification, at the other hand, increases one's sense of identity through the social preference value.

WTR:

The linear regression model in measuring WTR is expressed as follows:

$$WTR = b_0 + b_1 Self\ identity + b_2 Social\ identification + b_3 Female + b_4 Age + b_5 Edu1 + b_6 Edu2 + \varepsilon$$

Where WTR=dependent variable; bi=parameter to be estimated, coefficient; Self-identity/ Social identification/ Female/Age/Edu1/ Edu2=independent variable; ε = disturbance term.

Table 7 - Coefficients[a] for WTR

Model	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1 (Constant)	1.377	.416		3.308	.001		
Self-identity	.162	.091	.162	1.772	.079	.652	1.534
Social identification	.420	.107	.368	3.938	.000	.626	1.597
Gender	-.146	.125	-.090	-1.167	.245	.923	1.083
Age	.003	.006	.034	.453	.651	.964	1.038
Education1	.318	.187	.141	1.701	.091	.791	1.263
Education2	.065	.120	.043	.542	.589	.885	1.130

a. Dependent Variable: WTR

As indicated from SPSS output, social identification is significantly related to WTR (p= .000, β = .420), which means people that gained a higher level of social identification from crowdsourcing activity are more active in recommending their participation experience to others. One unit increase of social identification leads to a .420 unit increase of WTR. However, self-identity and other control variables (gender, age, education) are considered to be insignificant with WTR (p= .079, p= .245, p= .651, p= .091, p= .589). It is argued that the reason may behind it is from the different measurement of each concept. Because self-identity is considered to test one's inner evaluation, so it makes sense that there is no relation to the value of WTR that is focused on the social value.

Therefore, it is concluded that self-identity has only effect on WTP, while social identification has effect on both WTP and WTR. **Hence, H3b is partly rejected, and H4a is not rejected.**

6.4 Mediation Analysis of psychological empowerment

It is expected that the impact of self-identity and social identification on WTP as well as WTR are mediated by the factor of psychological empowerment. So in this section, mediation analysis was conducted by using Baron and Kenny's (1986)'s four-step approach.

However, in the previous section, the step 1 has already been examined, and the independent variables (self-identity and social identification) are proven to have a significant relation with the dependent of WTP, and have partly relation with WTR. Therefore, it allows for continual analysis in the following step.

6.4.1   Step 2:

The step 2 is to examine the relationship between the independent variables (self-identity and social identification) with the mediating factor (Psychological empowerment), and it is an essential step for testing the mediation effect.

Table 8 - Coefficients[a] for Mediation Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.664	.286			.022
Self-identity	.318	.063	.332	5.081	.000
Social identification	.565	.073	.515	7.729	.000
Gender	.053	.128	.024	.409	.683
Age	.081	.083	.055	.984	.327
Education1	.094	.086	.060	1.092	.277
Education2	-.012	.004	-.145	-2.693	.008

a. Dependent Variable: Psychological empowerment

It can be seen from SPSS output (Appendix 6), independent variables of self-identity and social identification are significantly related to psychological empowerment ($p= .000$; $p= .000$). With one unit increase in self-identity, the psychological empowerment can be increased by .318 units. Similarity, one unit increase of social identification can drive .565 unit increase of psychological empowerment. Besides, it is also noted that age is significantly associate with the mediator (psychological empowerment), where it has negative relation with it. In other words, the higher of age, the lower perception of psychological empowerment can be gained from crowdsourcing activity ($\beta = -.012$). In addition, education level and gender are shown to be insignificant to mediator (psychological empowerment) ($p= .683$; $p= .327$; $p= .277$).

6.4.2 Step 3

In this step, it is aiming to measure the correlation of mediator (psychological empowerment) with dependent variables (WTP and WTR). However, independent variables (self-identity and social identification) are also needed to add for the controlling purpose. Therefore, independent variables and mediator are used as predictors, while dependent variables are used as the criterion variables. It is expected to figure out whether the direct effect from independent variables to dependent variables becomes insignificant through the mediator. Furthermore, it is aiming to test whether psychological empowerment is a completely mediator or a partial mediator by examining the significance of indirect effect. Therefore, Structural Equation Modelling (SEM) was performed using the Maximum Likelihood Estimate in AMOS, and the analysis of WTP and WTR were given separately.

WTP :

Figure 6 – Mediation for WTP
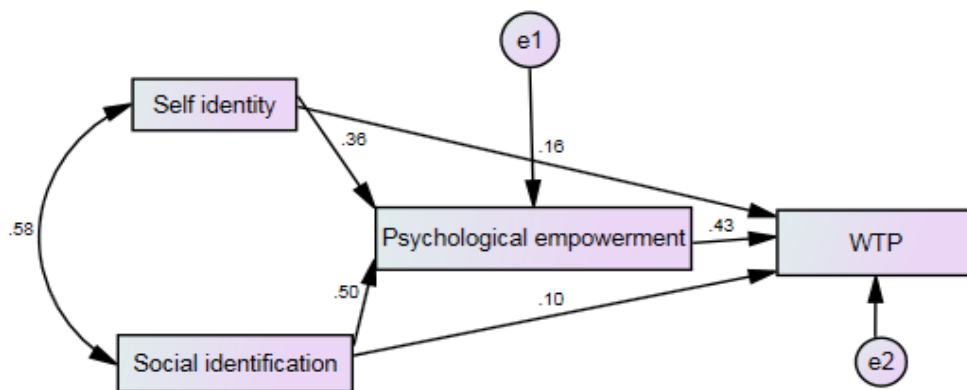
As illustrated from the figure above, the mediator (psychological empowerment) does have an effect on the dependent variable (WTP) ($p= .001$), and the independent variables (self-identity and social identification) do have an impact on the mediator (psychological empowerment), which gives evidence that there is mediation effect exist. However, more important, the insignificant relation between the independent variables (self-identity and social identification) and dependent variable of WTP ($p= .072$, $p= .287$) are observed (appendix 7), implying the direct effect becomes zero through the mediator (psychological empowerment), so the effect of self-identity and social identification on WTP is fully mediated by psychological empowerment

Bootstrapping was used to estimate the indirect effect. From the bootstrap analysis conducted in AMOS, the standardized indirect effects for both independent variables (self-identity and social identification) are significant (*p*= .000; *p*= .001), which provides support that the mediation effect is significant. Moreover, the standardized direct effects stated that both independent variables are insignificant associate (*p*= .148, *p*= .338) with the dependent variable (WTP). Therefore, it is concluded that there is the completely mediation effect for both independent variables of self-identity and social identification. In other words, the effect of self-identity and social identification to WTP are explained through the mediator of psychological empowerment. Therefore, I **do not reject H3a.**

Table 9 - Conclusion for Mediation Analysis (WTP)

Hypothesis	Direct effect (x-y)	Indirect effect	Result
Self-identity to Psychological empowerment to WTP	.157 (*p*= .148)	.152 (*p*= .000)	Full mediation
Social identification to Psychological empowerment to WTP	.101(*p*= .338)	.213 (*p*= .001)	Full mediation

* *p*<0.05, significant; *p*>0.05, insignificant

WTR:

Figure 7 - Mediation for WTR
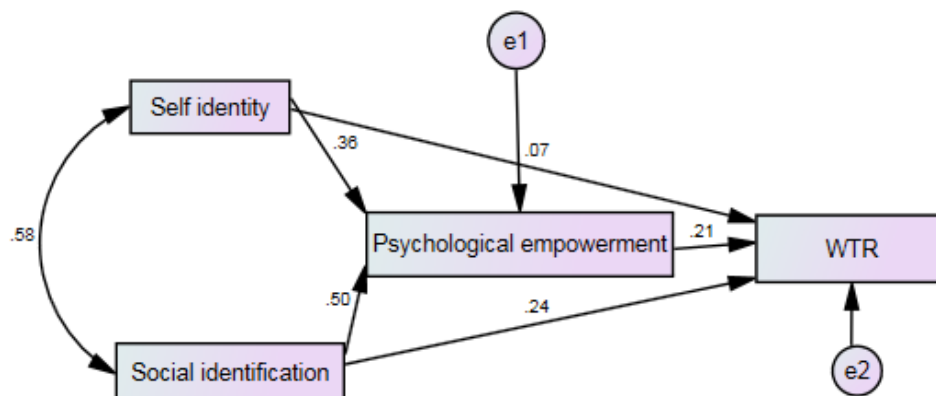
As indicated from the AMOS output. In regression weight (appendix 8), although the independent variables (self-identity and social identification) showed to be significant related to

the mediator (psychological empowerment) (p< .001; p< .001). However, the psychological empowerment is stated to be insignificant associate with the dependent variable (WTR) (p= .063), and it is addressed that psychological empowerment has no influence on WTR. Therefore, the mediation effect is not existed, and **H3b is rejected.**

7   Conclusion

This chapter presents the finding of the study as well as the discussion of the result. First, based on the analysis above, the findings are given to provide answers to the hypotheses, and the discussion of several important issues regarding the results is presented. Second, it is followed by the academic contribution, as well as the managerial implications. Finally, the limitations of this study and the possible future research directions for crowdsourcing are presented.

7.1 General Discussion

All hypotheses have been examined and measured by using SPSS and AMOS in the previous section. The detailed results of whether or not they are supported are given in table 10 below.

Table 10 - Summary of Findings

Hypotheses	Supported/ not supported
H1: Participation in crowdsourcing initiatives enhances consumers' self-identification with the brand.	Not Supported
H2: Participation in crowdsourcing initiatives enhances consumers' social identification account with the brand.	Not Supported
H3a: The self-identity and social identification generated from the crowdsourcing have a positive relation with people's willingness to pay.	Supported
H3b: The self-identity and social identification generated from the crowdsourcing has a positive relation with people's willingness to recommend.	Only supported for the social identification
H4a: The influence of people's self-identity and social identification from crowdsourcing on WTP is mediated by the psychological empowerment.	Supported
H4b: The influence of people's self-identity and social identification from crowdsourcing on WTR is mediated by the psychological empowerment.	Not supported

There are several issues that are interesting to discuss from the findings in table 10. The first is about the participation effect, concerning hypotheses H1 and H2. As stated in the analysis, there is no participation effect existed in the crowdsourcing activity. This is done by measuring the difference between people who have crowdsourcing participation experience with those who don't have. So by examining the different level of self-identity and social identification between these two groups, the result shows that crowdsourcing has no influence on self-identity and social identification. However, the insignificant result also gives evidence that previous crowdsourcing participation experiences cannot enhance people's self-perception of self-identity and social identification. In other words, whether people experienced a good or bad participation experience at other crowdsourcing activities cannot influence people's psychological feeling towards their current one. The emotional feeling is only an expression generated from the current crowdsourcing activity and for the current company. So there is no cumulative effect of self-identity and social identification from participating crowdsourcing. Moreover, it also gives support for proving the accuracy of this study, meaning that each crowdsourcing activity is independent from each other, therefore the following measurement cannot be influenced by the different participation condition brought from different respondents.

The second interesting issue worth mentioning here is the self-identity with respect to the behavioural intention of WTP and WTR. It is indicated in the previous section that self-identity has only influence on the WTP, but not for WTR. This could be caused by the essential meaning of self-identity. As suggested by its name, self-identity measures the sense and perception towards oneself, so the targeting of the intrinsic feature to oneself makes it has a closer relation to people's own behaviour, instead of to others. Because WTR is concerning the behaviour to others, so it is easy to understand that why self-identity does not have an influence on the WTR.

In addition, evidence also shows that psychological empowerment only acts as a mediator of the relationship between self-identity/social identification and WTP, but not between these and WTR. This is the most interesting contrast between the WTP and WTR in this study, which indicates that people could get intrinsically empowered by the effect of self-identity and social identification, and transforms these psychological feelings to the behaviour of WTP, but not to WTR. This may due to the fact of the different relation between psychological empowerment with WTP and WTR. As stated in the previous section that WTP is more associated with people's intrinsic behaviour, which is controllable, meaning when the behaviour is fulfilled, it has a direct consequence on satisfying people's cognitive state. However, the WTR is considered as extrinsic behaviour, in which its socialization feature has only influence on the social group, so the fulfilment of the WTR behaviour cannot strengthen back to one's psychological empowerment, by reflecting one's self-efficacy and self-determination etc.

Therefore, for this reason, it is argued that psychological empowerment has a strong effect on mediating self-identity and social identification into the contribution of WTP, but not WTR.

7.2 Academic Contribution

The findings of this study provide deeper insight into the topic of crowdsourcing in the academic perspective. The prior study is more focused on the stimulation or sustainability to the crowdsourcing activity, and finding different ways to motivate people in participating. However, these studies are considered to understand crowdsourcing from one side, which is by analysing the concept itself, to figure the advantage or the feature of it. So in this study, it enriches the concept from the other side, which is from participants' point of view, and known as the customer's perspective in marketing research. In this study, it goes further to explore the psychological feelings (self-identity and social identification) that can be gained to participants from crowdsourcing activity. Specifically, it is concerning the participant's psychological change during the process of crowdsourcing participation. Moreover, it also looked into the relation between participants' psychological feeling with respect to their behavioural intention, and concluded that the psychological feeling gained from crowdsourcing can overall enhance people's WTP and WTR. So it can be said that this study gives positive attention to connect the concept of crowdsourcing with its application in the marketing perspective. The new angle of focusing increases the validity of using crowdsourcing in the marketing application, and help to build the gap between the participant's psychological aspects and the effectiveness of crowdsourcing activity. Besides, it also gives evidence to the relation between WTP and WTR by adding participant's psychological involvement into consideration.

7.3 Managerial Implications

Some managerial implications can be gathered from this study to help companies in organizing crowdsourcing campaign in practice. Crowdsourcing is becoming popular and is applied by more and more companies. So it gives reason for the manager to gain the competitive advantage in organizing crowdsourcing campaigns, as well as turn the marketing investment into marketing effectiveness. Therefore, it is vital to have a holistic review of crowdsourcing campaign in order to know the right target and the right method to apply in practice. Looking the managerial context from this study, three recommendations can be gained.

First, the insignificant effect between crowdsourcing activity with self-identity and social identification suggests that people's previous participants experience did not influence their psychological feelings in their current involving activity. So in the crowdsourcing campaign designing process, manager should make sure to illustrate enough information about the

campaign to trigger out participants' emotion feeling towards the activity and the company, as well as linking the activity to them, which in turn to make an impact on their identity.

Second, the results also show that self-identity and social identification can enhance the WTP and WTR. Applying it in the practical crowdsourcing campaign, it is regarding the gaining of marketing effectiveness in an efficient way. At this point, marketing manager should pay more attention in helping increasing participant's self-identity and social identification during the participation process. For example, to public participant's idea or suggestion on the company's social network, or give rewards to the participants, to make them realize their importance and meaningful to the campaign and the company, which in turn increase their self-perception. Moreover, to attract people by displaying some common interests, this could help creating the social group and so to increase the social identification for them.

The third thing learnt from this study is related to the profit gaining within a company. Based on the finding of the contrast mediation effects between WTP and WTR, different suggestions are given to the different kinds of crowdsourcing campaigns with different objectives. For example, when organizing a crowdsourcing campaign where the goal is to collect innovative ideas and to increase the likelihood of paying, the mediator of psychological empowerment is the key indicator to focus on. So the marketing manager should empower people with the self-identity and social identification that can be gained from crowdsourcing campaign, and connect this empowerment feeling with the products and services sold within the company. In a crowdsourcing campaign where the main purpose is to boost awareness and increase the brand reputation, the WTR is of important. So the market manager should notice that psychological empowerment is not vital here, but instead to pay more attention in building the self-identity and social identification respectively, because these are suggested to have a positive relation with WTR.

7.4 Limitations and Directions for Future Research

Due to time and resource constraints, there are some limitations and suggestions that can be done differently in the future to improve the reliability of the results. One of the most noted ones is the insignificant effect between the link of crowdsourcing with self-identity and social identification (H1 and H2). Consequently, the most likely reason is that the question used was not robust enough. To be specific, the question of "have you ever participated in a contest similar to the one described here" was not clearly illustrating the participation effect on the independent variables of self-identity and social identification, because there was no measurement on the self-identity and social identification of the respondent who does not participate in the crowdsourcing, so the comparison between the different level of independent

variables between two groups of people was lacking. However, for future research, a different method could be used to solve the problem. Particularly, an experiment can be applied by introducing the control variable of 'crowdsourcing participation'. One group of people is asked to illustrate their psychological feeling towards a company, while the other group is asked for the same, but they would have a crowdsourcing activity in advance to illustrate the process. Therefore, the difference in their psychological feelings can be compared; to determine whether crowdsourcing can enhance people's self-identity and social identification. The advantage of the experiment is equally sampling, as well as it provides the insight on the focus of this research. In addition, it could also be done through the survey-based research, where two surveys can be created towards two different groups of respondents.

Another important issue is the control of respondent's knowledge and interest about crowdsourcing, as it is not a concept that is well known by most people. So the concern here is to find the proper respondent that can provide a valid answer for research. As in this study, the key informant approach was applied to put all respondents under the same atmosphere of crowdsourcing; however, there could still be a bias between people's actual behavioural decision and what they think they would do in real life. Therefore, in future research, the field experiment could be used to solve this problem. In detail, the researcher could do the research by following a undergoing crowdsourcing activity within a company, and take the participants as respondent in the study. The advantage is that all participants have enough knowledge and interest towards the crowdsourcing campaign, so the fact-driven answer provides with high external validity for the study.

Moreover, it could be also interesting to expand the topic of crowdsourcing to different aspects, such as the effect of crowdsourcing activity under different cultures or geographic perspectives. This can be done by adding additional variables (country and geographic) in the measurement process.

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Appendices

Appendix 1: Survey outline

Dear respondent,

Thank you very much for participating in my survey. I am a master student at Erasmus University Rotterdam and this survey is a crucial component of my master thesis. Hence, your honest and attentive responding will help me graduate, so thanks a lot for your time and help. The purpose of my survey is to improve our understanding of the potential implications of crowdsourcing for marketing purposes. Completing this survey will take about 5-10 minutes of your time. This survey will only be used for my research. I will keep your answers and any personal information anonymous and confidential.

Thanks again for your participation and help!

Please indicate your level of agreement with the following statements that best fits your feelings. Remember that there are no wrong or right answers, so please be truthful in your responding.

Imagine your mobile phone company (Apple/Samsung/HTC/Huawei, etc) wants to improve its products and/or services. To do this, your mobile phone company decides to organise a crowdsourcing contest, i.e. a contest where you (or any other customer) can share your ideas and opinions on how to improve their current products.

Any customer interested in sharing her or his ideas and opinions can simply join an online platform that supports this crowdsourcing contest. There is no limitation on who can join.

Participating customers can upload their ideas, join a discussion with other people for the interesting topic or vote for previously submitted ideas. The company will then go through all the submitted ideas and examine the ideas that receive a high amount of support. The company may then implement the best ideas, if they are good enough.

Would you like to participate in such a crowdsourcing contest?   Yes/No

Have you ever participated in a contest similar to the one described here?   Yes/No

Have you ever heard of contests similar to the one described here? Yes/No

In the next questions, we are interested in understanding better why customers participate in crowdsourcing contests. If you have participated or would be willing to participate in a crowdsourcing experience, reflect on your own motivations. Otherwise, please try to put yourself in the shoes of a participant and reflect on her or his motivation. Remember that there are no wrong or right answers, so please be truthful in your responding.

Appendix 2: Constructs and Measures

Constructs and Measures [Sources]

1. Self-identity [Caroll and Ahuvis, 2006; Pierce et al, 1989]:
Please read the following statements and indicate how much do you agree with them.

I feel that customers who participate in crowdsourcing contests do so because…

1. … participation makes them feel they have the power to decide key aspects related to their mobile phone.

2. … participation allows them to show their ability to add value to their mobile company.

3. …they feel that they can make a difference by showing their ideas and, therefore, feel important to their mobile phone company.

4. …they feel that they are taken seriously by their phone company in such a crowdsourcing contest.

Response scale: Strongly disagree (1) and strongly agree (5)

2. Social identification [Caroll and Ahuvis, 2006; Luhtanen & Crocker, 1992]:
Please read the following statements and indicate to what extent you agree with them.

I feel that customers who participate in these crowdsourcing contests do so because…

1. …participation gives them the opportunity to share their ideas and discuss them with other people, so it places them in a social "role" that they like.
2. …participation has a positive effect on what other people think of them because of their constructive idea.
3. …they enjoy talking and discussing their ideas with people who have the same interest as they have.
4. …the positive or negative reactions they receive from other people who take part in this activity are important to them.
5. …they feel connected to the other customers of their phone company by participating in this crowdsourcing contest.

Response scale: Strongly disagree (1) and strongly agree (5)

3. Psychological empowerment [Spreitzer, 1995]:
Please read the following statements and indicate to what extent you agree with them.

I believe that customers who participate in these crowdsourcing contests do so because…

1. …their participation in this crowdsourcing contest and contribution to the phone company are personally meaningful to them.
2. …they feel such a crowdsourcing contest provides them with good opportunities to give their opinion about the products and services.

3. …they have considerable opportunity to decide how they want to give their contribution, by submitting their idea, discussing or voting.
4. …they have significant influence on what happens in the next improvement.

Response scale: Strongly disagree (1) and strongly agree (5)

4. Willingness to pay [Fuchs, Prandelli & Schreier, 2010; Reynolds & Beatty, 1999]:

Please read the following statements and indicate to what extent you agree with them.

1. Imagine your phone broke down. Would you like to buy your new phone from your current mobile phone company?
2. Imagine you need to buy accessories (e.g. a new charger) for your phone. Would you like to buy one from current phone brand instead of buying one from another brand?

Response scale: very unlikely (1) and very likely (5)

3. I would likely prefer my current phone brand over competing brands that sell similar products
4. I would like to follow this brand on my social network.

Response scale: Strongly disagree (1) and strongly agree (5)

4*. Willingness to pay [Fuchs, Prandelli & Schreier, 2010; Reynolds and Beatty, 1999]: (Hypothetical customer)

Please read the following statements and indicate to what extent you agree with them.

I feel that customers who participate in theses crowdsourcing contests…

1 … are more likely to buy a mobile phone from the company organizing the crowdsourcing contest than other brands.
2 … are more likely to buy accessories (e.g. a charger) from the company organizing the crowdsourcing contest.
3 …. likely prefer their mobile phone brand over competing ones.
4 …. are more likely to follow their brand on social media than other customers.

Response scale: Strongly disagree (1) and strongly agree (5)

5. Willingness to recommend [Caroll and Ahuvis, 2006]:

Please read the following statements and indicate to what extent you agree with them.

1. I would like to recommend this brand to my friends or family because I like that this brand is customer-orientated.
2. I enjoy telling other people about my participation in this, or a similar activity.
3. I am likely to exaggerate how good my phone is towards other people, because of how much I enjoy taking part in this crowdsourcing contest.
4. I like reposting news from my current mobile phone company on my social network to show other people what my phone company does.

Response scale: Strongly disagree (1) and strongly agree (5)

5*. Willingness to recommend [Caroll and Ahuvis, 2006]:

(Hypothetical customer)

Please read the following statements and indicate to what extent you agree with them.

I feel that customers who participate in theses crowdsourcing contests…

1. … are more likely to recommend this brand to their friends or family because they like that this brand is customer-oriented.
2. … are enjoying telling other people about their participation in this, or similar activity.
3. … are more likely to exaggerate how good their phone is towards other people, because of how much they enjoy taking part in this crowdsourcing contest.
4. … are more likely to reposting news from their current mobile phone company on their social network to show other people what their phone company do.

Response scale: Strongly disagree (1) and strongly agree (5)

6. Age: use standardized score of age

7. Gender: 0="female", 1="male"

8. Education: 1="High school or below", 2="Bachelor", 3="Master", 4="Doctor or above"

Appendix 3: Cronbach's Alpha

Reliability Statistics

Cronbach's Alpha	N of Items
.757	4

Reliability Statistics

Cronbach's Alpha	N of Items
.739	5

Reliability Statistics

Cronbach's Alpha	N of Items
.741	4

Reliability Statistics

Cronbach's Alpha	N of Items
.788	4

Reliability Statistics

Cronbach's Alpha	N of Items
.744	4

Factor analysis

Component Score Coefficient Matrix

	Component				
	1	2	3	4	5
1-1	-.079	-.001	-.093	-.062	.496
1-2	-.154	-.074	.091	-.069	.544
1-3	.028	-.065	-.022	.029	.292
1-4	.264	-.080	-.009	-.038	-.062
2-1	.287	-.065	-.007	-.091	-.106
2-2	.224	-.110	-.086	.125	-.033
2-3	.087	.102	.106	-.205	.022
2-4	-.032	-.157	.491	-.102	.047
2-5	-.058	-.069	.399	.012	-.009
3-1	.132	.012	.082	-.006	-.054
3-2	.153	.203	-.032	-.169	-.138
3-3	.214	-.073	-.042	.028	-.007
3-4	.297	-.150	-.201	.277	-.085
4-1	-.002	.298	.008	-.091	-.124
4-2	.068	.179	-.177	.076	-.018
4-3	-.130	.341	-.129	.031	.089
4-4	-.132	.367	-.056	-.051	.008
5-1	-.148	.174	.238	.013	-.030
5-2	-.019	.037	.159	.185	-.168
5-3	-.052	-.091	.110	.350	.017
5-4	-.013	-.046	-.115	.505	-.036

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Component Scores.

Appendix 4: The influence of participation on self-identity and social identification

Group Statistics

	Participation	N	Mean	Std. Deviation	Std. Error Mean
Selfidentity	participate	73	3.2877	.82566	.09664

		74	3.4696	.68491	.07962
	have not participated	74	3.4696	.68491	.07962
Socialidentitfic ation	participate	73	3.5014	.72963	.08540
	have not participated	74	3.5919	.59536	.06921

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Selfiden tity	Equal variances assumed	1.541	.216	-1.455	145	.148	-.18192	.12505	-.42908	.06524
	Equal variances not assumed			-1.453	139.518	.148	-.18192	.12521	-.42948	.06563
Socialid entitficat ion	Equal variances assumed	1.142	.287	-.825	145	.411	-.09052	.10977	-.30748	.12643
	Equal variances not assumed			-.824	138.648	.412	-.09052	.10992	-.30786	.12682

Appendix 5: Step 1 (WTP)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.562[a]	.316	.286	.72111

a. Predictors: (Constant), Education2, Selfidentity, Gender, Age, Education1, Socialidentitfication

b. Dependent Variable: WTP

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	33.586	6	5.598	10.765	.000[b]
	Residual	72.800	140	.520		
	Total	106.386	146			

a. Dependent Variable: WTP

b. Predictors: (Constant), Education2, Selfidentity, Gender, Age, Education1, Socialidentitfication

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.090	.443		2.459	.015		
	Selfidentity	.333	.097	.297	3.426	.001	.652	1.534
	Socialidentitfication	.424	.113	.330	3.734	.000	.626	1.597
	Gender	.075	.134	.041	.562	.575	.923	1.083
	Age	-.007	.007	-.074	-1.042	.299	.964	1.038
	Education1	.096	.199	.038	.484	.629	.791	1.263
	Education2	-.018	.128	-.010	-.140	.889	.885	1.130

a. Dependent Variable: WTP

Step 1 (WTR)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.485[a]	.235	.202	.67700

a. Predictors: (Constant), Education2, Selfidentity, Gender, Age, Education1, Socialidentitfication

b. Dependent Variable: WTR

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.709	6	3.285	7.167	.000[b]
	Residual	64.166	140	.458		

Total	83.875	146					

a. Dependent Variable: WTR

b. Predictors: (Constant), Education2, Selfidentity, Gender, Age, Education1, Socialidentitfication

Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	1.377	.416		3.308	.001		
	Selfidentity	.162	.091	.162	1.772	.079	.652	1.534
	Socialidentitfication	.420	.107	.368	3.938	.000	.626	1.597
	Gender	-.146	.125	-.090	-1.167	.245	.923	1.083
	Age	.003	.006	.034	.453	.651	.964	1.038
	Education1	.318	.187	.141	1.701	.091	.791	1.263
	Education2	.065	.120	.043	.542	.589	.885	1.130

a. Dependent Variable: WTR

Appendix 6: Step 2

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.781[a]	.610	.594	.46474

a. Predictors: (Constant), Age, Socialidentitfication, Education2, Gender, Education1, Selfidentity

b. Dependent Variable: Psychologicalempowerment

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	47.387	6	7.898	36.566	.000[b]
	Residual	30.238	140	.216		
	Total	77.625	146			

a. Dependent Variable: Psychologicalempowerment

b. Predictors: (Constant), Age, Socialidentitfication, Education2, Gender, Education1, Selfidentity

Appendix 7: Step 3 (WTP)

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P Label
Psychologicalempowerment	<---	Selfidentity	.341	.063	5.418	***
Psychologicalempowerment	<---	Socialidentitfication	.548	.072	7.604	***
WTP	<---	Selfidentity	.176	.098	1.796	.072
WTP	<---	Socialidentitfication	.129	.121	1.065	.287
WTP	<---	Psychologicalempowerment	.500	.118	4.241	***

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
Psychologicalempowerment	<---	Selfidentity	.356
Psychologicalempowerment	<---	Socialidentitfication	.500
WTP	<---	Selfidentity	.157
WTP	<---	Socialidentitfication	.101
WTP	<---	Psychologicalempowerment	.427

Standardized Direct Effects - Two Tailed Significance (BC) (Group number 1 - Default model)

	Socialidentitfication	Selfidentity	Psychologicalempowerment
Psychologicalempowerment	.001	.001	...
WTP	.338	.148	.001

Standardized Direct Effects (Group number 1 - Default model)

	Socialidentitfication	Selfidentity	Psychologicalempowerment
Psychologicalempowerment	.500	.356	.000
WTP	.101	.157	.427

Standardized Indirect Effects - Two Tailed Significance (BC) (Group number 1 - Default model)

	Socialidentitfication	Selfidentity	Psychologicalempowerment
Psychologicalempowerment	...	...	...
WTP	.001	.000	...

Standardized Indirect Effects (Group number 1 - Default model)

	Socialidentitfication	Selfidentity	Psychologicalempowerment
Psychologicalempowerment	.000	.000	.000
WTP	.213	.152	.000

Appendix 8: Step 3 (WTR)

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

		Estimate	S.E.	C.R.	P	Label
Psychologicalempowerment <---	Selfidentity	.341	.063	5.418	***	
Psychologicalempowerment <---	Socialidentitfication	.548	.072	7.604	***	
WTR <---	Selfidentity	.074	.098	.754	.451	
WTR <---	Socialidentitfication	.275	.121	2.270	.023	
WTR <---	Psychologicalempowerment	.218	.118	1.856	.063	

Standardized Regression Weights: (Group number 1 - Default model)

		Estimate
Psychologicalempowerment <---	Selfidentity	.356
Psychologicalempowerment <---	Socialidentitfication	.500
WTR <---	Selfidentity	.074
WTR <---	Socialidentitfication	.241
WTR <---	Psychologicalempowerment	.210

Standardized Direct Effects - Two Tailed Significance (BC) (Group number 1 - Default model)

	Socialidentitfication	Selfidentity	Psychologicalempowerment
Psychologicalempowerment	.001	.001	...
WTR	.062	.600	.150

Standardized Indirect Effects - Two Tailed Significance (BC) (Group number 1 - Default model)

	Socialidentitfication	Selfidentity	Psychologicalempowerment
Psychologicalempowerment	...	...	...
WTR	.124	.096	...

Standardized Direct Effects (Group number 1 - Default model)

	Socialidentitfication	Selfidentity	Psychologicalempowerment
Psychologicalempowerment	.500	.356	.000
WTR	.241	.074	.210

Standardized Indirect Effects (Group number 1 - Default model)

	Socialidentitfication	Selfidentity	Psychologicalempowerment
Psychologicalempowerment	.000	.000	.000
WTR	.105	.075	.000