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# Persuasion of Online Crowdfunding Videos

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PERSUASION OF ONLINE CROWDFUNDING VIDEOS


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# **Abstract**

Crowdfunding is a relatively new and exciting way to get investments for a business startup or other project. We use the elaboration likelihood model (ELM) to explore how individuals are persuaded by the project videos on a crowdfunding platform called Kickstarter. ELM is a psychological model used to understand how people are persuaded. Our results support most of our hypotheses and showed that the need for cognition, which reflects the personal tendency towards the central route of ELM, does increase an individual's intent to back a project. We also discovered that intrinsic motivations and product quality have a stronger effect on intent to back a project than extrinsic motivations and argument quality respectively. These results should be investigated further. Our study contributes to research on the aspects of the crowdfunding website and how they impact successfully funding a project. Our findings can also be applied to current entrepreneurial practices, we make suggestions for crowdfunding sites and project creators.

# List of Tables

# List of Figures

# Table of Contents

# Introduction

Crowdfunding is a relatively new and exciting way to get investments for a business startup or other project. Crowdfunding is a type of crowdsourcing, specifically meant for sourcing funds from a large number of people. Crowdsourcing can be defined as using a large number of people to help solve problems and can be a way for businesses to access external expertise, collective intelligence, creativity, and reduced costs (Pedersen et al., 2013). We focus on the aspect of using crowdsourcing as a way to secure funding for a business venture. The concepts behind crowdsourcing were known long before online crowdsourcing began. Recent advancements in information and communication technologies have enabled easier outreach to the *crowd* (Pedersen et al., 2013). Crowdfunding can be an important strategic tool for an early startup, when traditional venture capitalists and angel investors are more difficult to obtain (Lehner, 2013).

A common crowdsource technique is through online platforms that allow individuals or organizations to advertise projects, and receive funding. If the project is receiving the set goal amount of funds, then the project creator will receive the funds. The project creator is then responsible for providing the rewards for supporters as outlined on the project webpage. Kickstarter is one of these reward based platforms and is a successful example (Ethan Mollick, 2014). A *backer* is what Kickstarter calls the user that supports projects with funding. Backers supporting projects are what produce the funds for project creators; backers are investors in the business startup or other project. To succeed a project creator must persuade users to back their project.

Factors influencing successfully funding a project during crowdfunding were explored, they include: completeness of business plan, financial plan, schedule, product design, and

assembled team (Mollick & Kuppuswamy, 2014). The influence of social factors under investigation include: the number of friends on Facebook, and the social group of the project creators helps predict if projects will be funded (Mollick, 2014). The number of social connections a project creator possesses can create a *seeding* effect of contributions which helps start the *herding* process (Colombo, Franzoni, & Rossi-Lamastra, 2015). Funding for projects is highly skewed so that projects with more funding have a herding effect on backers, so that the more backers a project has the more likely they will get more backers in the future (Agrawal, Catalini, & Goldfarb, 2014). Herding may result from a realistic concern about crowdfunding. A concern that project creators will receive funding and then subsequently fail to deliver on promised rewards (Kuppuswamy & Bayus, 2015).

Website factors are also important to consider for crowdfunding effectiveness. Website quality can affect perceived product quality in online transactions (Wells, Valacich & Hess 2011). Trust is also affected by website quality and brand alliances, which can have large effects on purchase decisions (Lowry, Vance, Moody, Beckman, & Read, 2008). Quality of rewards, information given on the page, and graphics may all play roles in persuading a backer to trust the platform and/or project creator, and ultimately fund a project.

Research on the aspects of the Kickstarter project page itself is limited. An important part of most project pages is the video. Kickstarter allows project creators to post a video on their project page, but is limited to a 5GB file size (Kickstarter, 2015). Yet there has been no research on the effectiveness of the videos placed on the project page.

Some content of the video may be more persuasive than other content, and the effect may be different for different people. The elaboration likelihood model (ELM) can be used to explore how individuals are persuaded by the video. ELM is a psychological model used to understand

how people are persuaded (Petty, Cacioppo, & Schumann, 1983). According to this model either a person uses the central route of processing, or uses a peripheral route of reasoning.

The central route is typically used when the topic of persuasion is highly relevant to the person, and is usually more affected by argument quality. For the central route to be instantiated, it requires that the user is both motivated and capable of processing the message. We can define the central route as systematic, cognitive intensive decision making. The peripheral route of persuasion is based on the cues about the content rather than focusing on argument quality itself. These cues include the appearance of the presenter, and the way the information is presented. The peripheral route can be defined as decision making not based on cognition. The central route is based on cognition, and the peripheral route on affect. Some people tend to use either route more often (Petty & Wegener, 1998).

Motivation is also important to persuasion. Some people may be more motivated by how they would look using the product, or how the product makes life easier for them. Intrinsic and extrinsic motivations can both motivate someone to purchase a product (Li, Jervis, & Drake, 2015). Motivation to purchase a product may be affected by the route of attitude change an individual takes. For example, participants that tend to use the central route may rate extrinsic motivations for the product higher than those that take the peripheral route.

The proposed project will examine why backers would give funds for a project, after only being presented the project video. Using the ELM, we will examine if the central or peripheral routes are more effective at persuading backers to support a project.  To do so we use the individual's need for cognition, which will measure personal tendency to use central or peripheral routes (Cacioppo & Petty, 1984). We also measure intrinsic or extrinsic motivations to see how these tendencies manifest within motivation to acquire the product. Overall we are

interested in how personal tendency of ELM route affects perceived product quality and argument quality, and ultimately intent on backing a project. We thus investigated the following research questions:

RQ1. How does need for cognition impact intrinsic and extrinsic product-related motivations?

RQ2. How do intrinsic and extrinsic motivations impact perceptions of product quality and argument quality?

RQ3. How does product quality and argument quality impact the intent to back a project?

This study has important implications for research and practice. Our study contributes to research on the aspects of the crowdfunding website and how they impact successfully funding a project. Our findings can also be applied to current entrepreneurial practices, we will make suggestions for crowdfunding sites and project creators. This research will give important insight into what makes the project videos persuasive, and give some insight in how they should be created. In addition, through exploring online crowdfunding project videos we will gain further understanding of online video persuasiveness.

# Literature Review

**Elaboration Likelihood Model**

The ELM was first developed over thirty years ago by Cacioppo and Petty (1979), and has been further revised several times since then (Petty et al., 1983; Petty, Webener, Fabrigar, Priester, & Cacioppo, 1993). It has also been thoroughly validated and applied to a variety of research (Petty & Wegener, 1998). ELM describes the process of attitude change or formation. To do so it uses an elaboration continuum, where: At one end there is no cognitive thought about the information presented, and at the other there is full absorption and understanding of the information presented (Petty et al., 1993). The peripheral route is closer to the end with no cognitive thought, and the central route is closer to the end with full absorption. Both routes lead to persuasion, but central route leads to a more persistent attitude change over time and a greater prediction of behavior.

The central route requires motivation and ability, and includes evaluation of content, and argument quality. The more invested a person is in the decision the more motivated they are to elaborate on their thinking about it, leading them to the central route (Petty et al., 1983). An individual's personal attributes affect the route they take (Chen & Lee, 2008).  Also, the better the argument and content, the more persuaded someone will be if they are using the central route of persuasion (Petty et al., 1983). The persistence and greater effect on behavior could be attributed to the higher involvement while forming or changing the attitude (Petty et al., 1993).

Ability and motivation increases a person's likelihood to 'elaborate,' or take a cognitive approach to systematically analyze the merits and quality of the arguments. Motivation to elaborate is the result of personal investment in the decision and an individual's need for cognition: An individual's cognitive ability and personal tendency to use that ability (Cacioppo & Petty, 1984). To measure this the need for cognition scale was created. The need for cognition

scale is an assessment of "an individual's tendency to engage in and enjoy effortful cognitive endeavors" (Cacioppo & Petty, 1984). Low need for cognition could lead to peripheral influences like appearance of the presenter having more of an effect on attitude.

The peripheral route occurs when individuals are unwilling or unable to complete the central route cognitive processing. Low involvement in the decision can lead individuals to not be motivated enough to use the central route, so the peripheral route is taken. Peripheral cues (e.g., perceived credibility of the persuader) are still used through the central route, but because they require less cognitive effort they can be dominant in attitude change and formation if involvement is low (Petty et al., 1993). Personal differences in need for cognition play a role in the likelihood of someone not using the central route, and using the peripheral route instead.

Backers on Kickstarter are funding projects, but many times also getting a product in return. In some ways Kickstarter can be treated like an online storefront. ELM is an important model used to understand how customers are persuaded to purchase retail items. Both physical and online storefronts can be researched through an ELM perspective (Bezes, 2015). Also, both the central route and the peripheral route are important in online communication (Chen & Lee, 2008).

ELM has been used to explain persuasion in online advertising (Cho, 1999). Although the model is slightly different for online advertising compared to print advertising we believe the principles of ELM to still be applicable. Non-advertising videos have also been studied with ELM (Withers & Wertheim, 2004). So we believe ELM will be an apt model to describe persuasion of crowdsourcing videos.

**Product-related motivation**

On crowdfunding websites, like Kickstarter, the rewards for backing are often the product that the project is trying to create. There are a variety of motivations to back a project. Some research suggests that users back for the sense of community with other Kickstarter users, but we will be focusing on product-related motivations (Gerber, Hui, & Kuo, 2012). There are both intrinsic and extrinsic motivations to purchase products (Li et al., 2015; Shang, Chen, & Shen, 2005). Intrinsic motivations are directly the result of using the product, while extrinsic are related to using the product. Intrinsic and extrinsic motivations are highly related to each other. For example: If an individual enjoys the extrinsic benefits of using a product, then the physical attributes of a product might 'grow on them' and they will intrinsically enjoy the attributes of the product. Both intrinsic and extrinsic benefits of the product are important in purchase decisions (Li et al., 2015).

Intrinsic motivation can be defined as doing an activity for the satisfaction it brings, not for the consequence (Ryan & Deci, 2000). Intrinsic motivations are typically more of an individual preference and come from a personal enjoyment or value while using a product. Attributes of the product that induce intrinsic motivations cannot be changed without physically changing the product itself (Li et al., 2015). The intrinsic motivations may be stronger at different occasions but are always a result of an attribute of the product. The process of intrinsic motivation happens between the individual and the task, the person and the task alone provide the intrinsic motivation. These motivations are considered when deciding to purchase a product, and can easily be determined by the individual if they know enough about the product.

Extrinsic motivations are the result of the outcome of using a product. These benefits are not directly attributes of the item that the individual enjoys, but rather the indirect advantages it gives them when using them. Extrinsic motivations are often commonly shared between people

in similar situations. However, extrinsic motivations can also come from an individual's internal

regulation of actions, so are unique to each individual as well (Ryan & Deci, 2000). Overall,

extrinsic motivators are dependent on other factors as well as the product, like culture or

situation (Li et al., 2015). The other factors affecting extrinsic motivators, make extrinsic

motivators less easily determined by the individual.

In our study, individuals will have to witness or imagine some advantages of the products

because of only seeing a video of the product. Some of the physical attributes of the product can

be seen like shape and size, which may be very important for enjoyment of using the product.

Also, many of the possible enjoyments and advantages of using the product are often showed in

the video. The nature of the product may be more intrinsically motivating or extrinsically

motivating, or individuals may be more intrinsically motivated or extrinsically motivated to use

the product.

**Kickstarter**

Despite being a newer form of funding, crowdfunding platforms like Kickstarter have

been very successful and are a viable replacement for traditional funding (Agrawal et al., 2014).

Currently over $2,000,000,000 have been pledged to over 100,000 successful Kickstarter

projects (Kickstarter, 2015). Several factors influencing project funding success have been

explored, and other research is trying to better understand how crowdfunding works (See

Appendix A).

There are a lot of benefits of this new type of funding, but also some risks for backers.

These pledges are still investments and even if the project is fully funded, the company can fail

to deliver the rewards. Fraud is a possibility, although it is rare (E Mollick & Kuppuswamy,

2014). There are numerous late deliveries and failures. The fear of project failure in addition to

the projects creator's social network effects could be why some projects succeed far above expectations while most projects fail. Network effect also plays a large role in the crowdfunding platform success; the more users the more people wanting to post projects, and vis versa (Agrawal et al., 2014).

Social networks can also be utilized to help promote projects. The project video can easily be embedded in and shared through social media. Including a video is not required but can be a great addition to the text and pictures on the project page. We believe the video is a key part of the project page and the project social media sharing. As the saying goes: If a picture is worth a thousand words, then a video is worth a million.

# Theoretical Model

The chosen route for persuasion and motivation may affect how users perceive product quality and argument quality. Perceived argument quality and product quality then affect the user's intent to back the project. The theoretical model we propose can be seen in Figure 1.

Figure 1. Theoretical Model
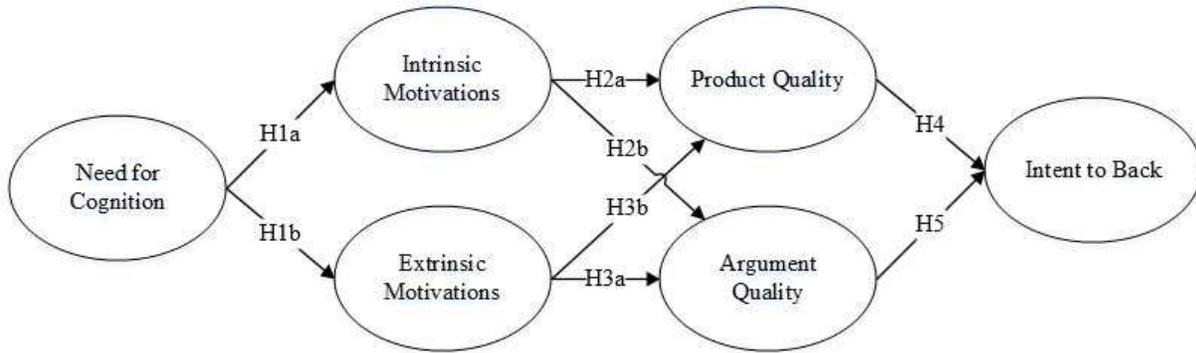


We predict that the need for cognition will positively relate with intrinsic motivation. An individual with the tendency to take the central route of ELM, the cognitive route, should recognize more of the intrinsic advantages the product offers. The more elaborate thinking about the presented product makes intrinsic motivations more obvious. This is because the central route of processing entails more involvement. The additional involvement occurs because a systematic evaluation of the product and related alternatives will occur (Styśko-Kunkowska & Żbikowska, 2014). This systematic evaluation focuses on the arguments regarding the product itself, and are more likely to become motivating reasons for the individual to invest in the product. Similarly, the more an individual is invested in decision making the more they consider the proposed advantages of the product.

In addition, there is a connection between feelings of competency and intrinsic motivation (Ryan & Deci, 2000). Intrinsic motivation may be related to need for cognition because the feeling of competency is an intrinsic motivator itself. So if an individual's need for cognition is higher, then they might be more motivated by intrinsic motivations like that of feeling competent.

*H1a. The need for cognition will be positively related to intrinsic motivations for the product.*

The need for cognition will also positively relate to extrinsic motivation. Like hypothesis H1a, the cognitive route would also make extrinsic advantages of the product clear. The advantages will become more clear as a result of the individual being more involved, because they will see more ways that it will make life easier for them. If an individual knows a product will make life easier for them, then that is an extrinsic motivator because it is the result of using the product that is motivating. Individuals that are motivated and able to process the arguments will evaluate the attributes of the product that are important for its evaluation. The systematic evaluation of the attributes of the product would increase the likelihood of the individual adopting those beliefs and becoming motivated due to those beliefs. These beliefs regarding the attributes of the product, would be related to the product itself, and are thus more extrinsic in nature.

Extrinsic motivation is also related to competence, the extrinsic motivation to become competent becomes internalized (Ryan & Deci, 2000). The motivation to become competent is a motivation for an individual's need for cognition. Individuals that have a high need for cognition may be more affected by extrinsic motivations. So, extrinsic motivation may be more important to those with high need for cognition.

*H1b. The need for cognition will be positively related to extrinsic motivations for the product.*

Intrinsic motivation should positively relate with product quality. The more intrinsic value an individual sees in a product, the higher the perceived quality should be. Expected intrinsic value of something is a large part of its perceived quality (Li et al., 2015). The intrinsic motivation comes from the physical attributes and use of the product itself, and the perceived product quality does as well. So, both intrinsic motivation and product quality should be rated higher if the product seems to be physically good quality and enjoyable to use.

If an individual sees intrinsic value in a product, then that individual will form a positive attitude about the product. When that attitude is formed, individuals will try to achieve consistency with the views of quality of the product. Cognitive consistency suggests that if individuals will change their attitude to be consistent (Gawronski & Strack, 2004). Implicit attitudes, that occur without conscious awareness, are especially stable. So, an implicit positive attitude formed about the product through intrinsic motivators may have a positive effect on the attitude of the product quality.

*H2a. Intrinsic motivation will be positively related to perceived product quality.*

The strength of the perceived intrinsic motivators should also make argument quality increase. Increasing the amount of information presented about the attributes of the product should raise both intrinsic motivation and argument quality. Both argument quality and intrinsic motivation rely on how much, and how well information about the product is presented. If the argument provides sufficient information about the product, then it seems like a well presented argument. Similarly, if less intrinsic motivators are seen, the argument won't seem as effective.

Cognitive consistency applies here as well. Once an implicit attitude is formed about the product, an individual will either agree or disagree with the arguments based on that attitude. A positive opinion about the intrinsic motivation for the product may lead to an individual see more value in the information provided. If an individual sees more value in the arguments provided, then they will have a more positive opinion of the argument.

*H2b. Intrinsic motivation will be positively related to perceived argument quality.*

The strength of the extrinsic motivators should also increase the strength of argument quality. The more perceived extrinsic motivations the better the argument seems. Information provided that would increase argument quality may also be information that increases extrinsic motivations. A quality argument should explain how the product will make your life easier, and other extrinsic motivators. The persuasiveness of the argument is the result of how motivated it makes the listener to back the project. In addition, like H3b, cognitive consistency could apply to how the argument is viewed.

*H3a. Extrinsic motivation will be positively related to perceived argument quality.*

Extrinsic motivation should positively relate to product quality. Uses that bring extrinsic motivations are part of perceived product quality (Li et al., 2015). The usefulness of the product is directly related to its quality. For example, if the product is an advancement over other products and it adds some sort of usefulness, then the fact that it is a useful advancement raises the quality. Some extrinsic factors like cost are not known from the Kickstarter video alone, so the relationship between extrinsic motivation and product quality may be diminished.

*H3b. Extrinsic motivation will be positively related to perceived product quality.*

Product quality should positively relate to intent to back. Product quality is one of the main reasons why people buy products, along with other extrinsic motivations like cost

(Moskowitz, 1995). Motivators increase perceived product quality, and motivation is the driver for behavior (Ryan & Deci, 2000). Thus, the product quality will increase intent to back.

Many studies have found perceived product quality is related to purchase intention, but there is some disagreement about whether the effect is direct or indirect (Tsiotsou, 2006). Some research shows product quality has an indirect effect with purchase intention through satisfaction. However, when deciding to back a product on Kickstarter, a person cannot have the experience of using the product and feeling satisfaction. Therefore, we predict there will be a direct effect of perceived product quality should have a positive effect on intent to back.

*H4. Perceived product quality will be positively related to intent to back the project.*

Argument quality will positively relate to intent to back. Argument quality has been found to positively affect purchase intentions (Martin, Lang, & Wong, 2003). The quality of information given and how persuasive the presenter is will make the attributes and benefits of the product clearer and seem better. Like product quality, the individual's view of argument quality is positively related to motivations. So product-related motivations effect on intent to back will go through argument quality.

The presentation of the argument being high quality should make backers more confident in the project, and successfully finishing the product. Higher confidence in the completion of the project should remove inhibitions about supporting the project. The effect of argument quality should not be as high as product quality; product quality is more important to purchase decisions.

*H5. Perceived argument quality will be positively related to intent to back the project.*

# Method

## Procedure

An online manipulation (Videos with story vs. videos without story) with a two-part survey was administered through Amazons Mechanical Turk (AMT). AMT is a website where *requesters* can post *HITS* (i.e., opportunities to enroll in and be paid for their work) and then those HITS can be completed by *workers* ("Amazon Mechanical Turk," 2015). AMT has been identified as a viable research subject pool, and when used correctly can be a valuable research tool (Rand, 2012).

Initially, in our data collection there has been some data quality issues from the workers. Some workers seemed to not spend enough time or effort on the survey, thus providing inaccurate data. In order to reduce the likelihood of this, objective questions regarding the content of the video were inserted and workers were removed from the survey if they could not answer the questions correctly. This allowed us to filter out workers who were not paying attention to the content of the video, which was important for the research questions of the study. To further filter out bad responses, we automatically removed workers from our survey if they completed the study in less time than the length of the video, indicating that they had not watched the video.

Responses of participants that were removed from the survey were not included in our data. Part two was only administered to workers that completed the video coding in a satisfactory manner as described above. Only participants who responded in a satisfactory manner to questions about the videos they viewed, took appropriate amounts of time, and successfully responded to attention trap questions were retained in our final dataset.

The first part of the survey consisted of the video manipulations. The videos were presented to participants in random order to remove order bias. We selected three Kickstarter

videos from the Design and Technology section. These videos were selected for their ability to be edited to remove the part of the video pertaining to the story of how the project started. We then introduced our manipulation by removing the story portion of the video from these three videos, creating a video with-story condition and the same videos without-story condition. Pictures from other parts of the project were replaced to make the with-story and without-story videos the same length. We are not examining the effect of removing the story in this study. After viewing a video, the worker was asked to respond to questions about the video that they had just watched.

The three product videos were from design and technology products on Kickstarter. One project was a coffee steeper. The goal was to create an alternative to French press and pour over techniques of coffee preparation with an easy to use product. The second project is a combination of technology and outdoor games for kids. The product is an easily programmable ball that kids can create their own games with. The last project is a tool that makes the convenient camera on your phone take higher quality pictures. They created a magnet attached lens for your phone camera.

Part two of the survey consisted of an instrument to assess various constructs and demographics. It included the need for cognition scale (Cacioppo & Petty, 1984), and other demographic information like age, gender, work experience, and education. Items in the need for cognition scale were reverse coded as necessary to calculate the total score. Workers were paid a total of $6 for completing both parts of the survey.

**Measures**

**Video Survey.**
Each video was accompanied by a series of question sets regarding, the project creator(s) depicted in the video; the product; the information provided; reasons why backers should support

them; video quality; the value of the product; the likelihood the participant would back the project; etc. Participants would rate each item on a seven-point Likert scale, ranging from strongly disagree to strongly agree. This set of questions is a collection of relevant measures adapted from research, and questions we created (see Appendix B). We removed items as necessary to keep the loadings on the principle component at least .6. The items used for each construct in this study are listed in Appendix C.

**Demographics.**
We included the worker's gender, age, race, education, and work experience (see Appendix D). Several questions pertaining to the participant's experience with Kickstarter and other crowdfunding websites were also included. The location of the participants is limited to the United States by the AMT system, and we also confirmed this by asking the participants their zip code.

**Need for Cognition Scale.**
The Need for Cognition scale is designed to measure a participant's motivation to engage in or avoid cognition-inducing situations (Cacioppo & Petty, 1984; see Appendix E). The participant's need for cognition may influence which aspects of Kickstarter videos are persuasive based on the cognitive route of persuasion. The Need for Cognition measures the personal tendency to seek out cognition, and as a result shows a tendency towards the central route of persuasion of ELM. The Need for Cognition scale has been used extensively with ELM studies (Petty & Wegener, 1998).

For each item participants rated how a statement described themselves on a seven-point scale from strongly agree to strongly disagree. We used exploratory factor analysis to reduce the number of items to achieve better fit of the model. We reduced the scale to five items that had

19

loadings of at least .75 on the first principal component. The items for our need for cognition construct are listed in Appendix B.

**Data Analysis**

To test our theory, we created a structural equation model (SEM) based upon our theoretical framework. We followed typical validation procedures as outlined in Gefen, Rigdon, and Straub (2011). The measurement model had a $chi^2_{(512)} = 1854.86$. We then removed items based on exploratory factor analysis (see Appendix B). Summary descriptive statistics of our constructs are depicted in Table 1.

Table 1. Construct descriptive statistics summary

| Construct | Mean | St Dev. | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|
| 1. Need for cognition | 4.03 | .41 | 1.00 | | | | | |
| 2. Intrinsic motivation | 4.90 | 1.62 | 0.01 | 1.00 | | | | |
| 3. Extrinsic motivation | 4.22 | 1.76 | 0.01 | 0.85 | 1.00 | | | |
| 4. Product quality | 5.28 | 1.09 | -0.01 | 0.58 | 0.53 | 1.00 | | |
| 5. Argument quality | 5.60 | 1.10 | 0.03 | 0.58 | 0.47 | 0.71 | 1.00 | |
| 6. Intent to back | 3.77 | 1.81 | 0.01 | 0.74 | 0.67 | 0.64 | 0.59 | 1.00 |

Before testing the model, we first confirmed the reliability of the scale. This was done through an analysis of the Cronbach's alpha for each scale, which should be higher than .70 (Cortina, 1993). A review of alphas for each scale (see Table 2), reveals that each construct had high internal consistency.

Table 2. Construct Cronbach's Alpha

| Construct | Cronbach's Alpha |
|---|---|
| Need for cognition | .92 |
| Intrinsic motivation | .97 |
| Extrinsic motivation | .89 |
| Product quality | .71 |
| Argument quality | .90 |
| Intent to back | .96 |

We tested the normality of our data with Mardia's statistic: Mardia mSkewness = .195848, $chi^2_{(1)}$ = 15.734, Prob > $chi^2$ = 0.0001 and Mardia mKurtosis = 2.842584, $chi^2_{(1)}$ = 0.491, Prob > $chi^2$ = 0.4833. These results show that our data is skewed, so we will use a robust maximum likelihood (Kline, 2015). We also ran kdensity, pnorm and qnorm tests in Stata for a visual of the normality of the residuals (see Appendix F).

Multiple variations of this model were explored before writing this paper. The model we propose in this paper was the best fitting to our data. This method of data analysis is currently being debated in the field of psychology (Alexander et al., 2012; Pashler & Wagenmakers, 2012; Simmons, Nelson, & Simonsohn, 2011; Simonsohn, Nelson, & Simmons, 2014). Exploring multiple models and then reporting only one is being called *p* hacking, and it be may be causing issues for the replicability of studies. Thus, we will suggest replicating this study.

We used maximum likelihood to analyze our model, and used robust analysis because of our skewed data. To assess the fit of our model, we report the model fit statistics. The model fit of our SEM seemed acceptable: $chi^2_{(157)}$ = 537.32, Root Mean Squared Error of Approximation (RMSEA) = 0.071, Comparative Fit Index (CFI) = 0.960, Tucker-Lewis Index (TLI) = 0.952 and Standardized Root Mean Squared Residual (SRMR) = 0.077. The appropriate levels for these fit indexes are: RMSEA < 0.08, CFI > 0.95, TLI > 0.95 and SRMR < 0.05 (Gefen et al., 2011). The

SRMR is slightly high, but because the other measures of model fit seem appropriate we determined that these fit statistics indicate that our data fit well to the model. We controlled for age, gender, education, and work experience. We also controlled for the differences between videos by using dummy coding. We report the results of our model analysis in Figure 3.

Figure 2. Results
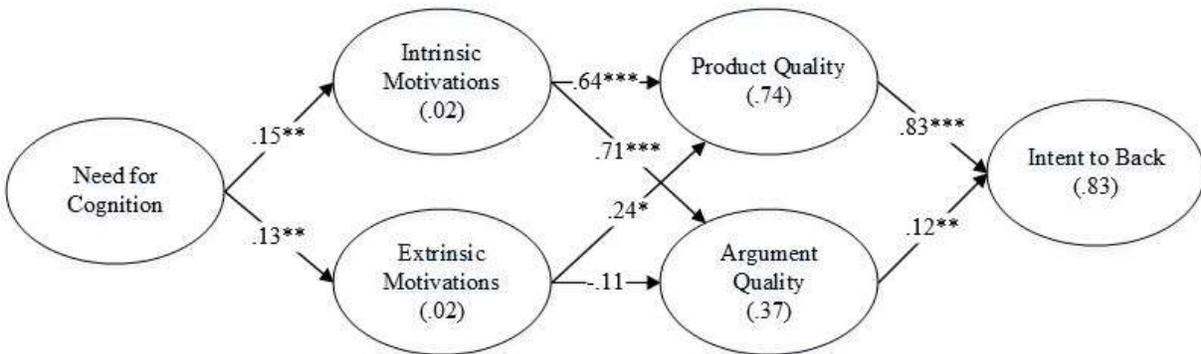


* $p < .05$; ** $p < .01$; *** $p < .001$; n.s. = not significant; $R^2 = (.\#\#)$

We also ran tests to see if intrinsic motivations and product quality had a statistically larger effect. To do so we extracted a construct score for each construct from the final model and regressed the appropriate relationships with the respective dependent variable. For example, we ran one regression onto intent to back with argument quality and prod quality. Then we did a post-estimation test between the coefficients and found that the results indicated that both intrinsic and extrinsic (F = 28.21, df = 477, $p = 0.000$), and product quality and argument quality (F = 770.67, df = 477, $p = 0.000$) are distinct. This shows that the effect of intrinsic motivations

and the effect of product quality are both significantly larger than extrinsic motivations and argument quality respectively.

**Results**

Most of the hypotheses were supported: H1a, H1a, H2a, H2b, H3b, H4, and H5. Hypothesis H3a was not supported (see Figure 2). We find that the need for cognition did positively impact intrinsic motivation (H1a) and extrinsic motivation (H1b). Intrinsic motivation had a positive effect on both product quality (H2a) and argument quality (H2b). Extrinsic motivation however, only had a positive effect on product quality (H3b), while there was no effect on argument quality (H3a). Product quality had a large positive effect on intent to back (H4), but argument quality only had a small positive effect (H5).

Two controls had a significant effect. Education (-0.06, $p < .05$) and gender (-0.06, $p < .05$) had a negative effect on intent to back. The other controls of age (0.03), work experience (0.07), and the videos 2 (0.02) and 3 (-0.06) did not have a significant effect.

# Discussion

## Summary of Results

Our results support existing evidence that the central route of ELM is more effective for attitude change than the peripheral route (Petty & Wegener, 1998). This is supported by the need for cognition relating to both intrinsic (H1a, 0.15 $p < .01$) and extrinsic motivations (H1b, 0.13 $p < .01$) positively and significantly. Our hypothesis that motivation to purchase the product will be increased with the individual's need for cognition, which measures the tendency that the individual engages in central processing, was supported.

Intrinsic motivation positively and significantly relates to both product quality (H2a, 0.64 $p < .001$) and argument quality (H2b, 0.71 $p < .001$). These results support our hypotheses. Intrinsic motivation has a larger affect than extrinsic motivations on both product quality and argument quality. Extrinsic motivation had little effect on both product quality and argument quality (H3a, 0.24 $p < .05$; H3b, -0.11). This shows that the intrinsic benefits of the product had stronger effect on the perceived quality of the product and the arguments in the video than extrinsic motivations.

We have four explanations for why intrinsic motivations had a stronger effect than extrinsic motivations. Explanation one: Intrinsic motivations are stronger because of the types of products in the videos have more intrinsic benefits than extrinsic. Two: The online medium may be limiting individual ability to perceive extrinsic motivation. Three: Some people may be more comfortable making a decision with the limited information available through just a video. The type of people that enjoy shopping online may favor intrinsic motivations more than people who don't enjoy shopping online (Garrity, O'Donnell, Kim, & Sanders, 2007). Four: These results could relate to the results of product quality having a greater impact on intent to back. In an

environment where product quality is more important, intrinsic motivations may also be more important as a result.

As predicted, product quality was highly positively related to intent to back (H5, .83 $p <$ .001), but surprisingly argument quality had only a small effect on intent to back (H6, 0.12 $p <$ .01). Our results suggest having a valuable and innovative product is more important than presenting that product well. The way you explain the product still matters, but the product is more important. This seems logical with the nature of reward based crowdfunding, at least in design and technology projects. The reward is the product, so the incentive to back the project is getting a quality product.

The significant effect from the control variables was a slight negative effect from education (-0.06, $p < .05$) and gender (-0.06, $p < .05$). This suggests that a higher education and being a woman slightly decreased intent to back. The effect of education could result from more knowledge of the risk in funding a business start-up. It is common for projects to be late, and possible for products to not even be delivered. Higher education may also reduce the effectiveness of claims from the video about the project. A more educated individual may be less amazed by a new product. The effect that women have a lower intent to back could be related to the products in the video, those products might more appealing to men. Yet, it is likely a result of the uneven sampling of women (66.04%) and men (32.70%).

**Contributions to Research**

This study extends the use of ELM in regards to product purchase intentions by applying it to reward based crowd funding. Specifically, this is the first research on crowdfunding platform videos. We find that personal tendency to use the central route of ELM increases product-related motivation, product-related motivation then increases perceived product and

argument quality, and that perceived quality increases intent to back a project. Specifically, we have four contributions to research:

1. Kickstarter can be thought of as a platform for decision making. Specifically, we show that ELM is an apt model to understand how people can be persuaded to back a project.

2. We show that central processing is more important for persuading people to back a project than peripheral processing.

3. Intrinsic motivations are more important than extrinsic motivations in crowd funding decision-making. However, this finding may be limited to design and technology projects.

4. The perceived quality of the product is a more important determinant of whether someone will back a project than the quality of the arguments for it.

**Implications for Practice**

The nature of this research provides practical implications for crowdfunding platforms, and crowdfunding project creators. Based on our results we will give suggestions for each of these parties. Any suggestions are examples of how the results can be applied in the respective area of practice. These implications may be extendable to other practices beyond crowdfunding as well.

The first suggestion we have for crowdfunding platforms is requiring or putting more emphasis on the videos for project pages and setting or suggesting standards for videos. This study finds that from the videos alone there is an increase to intent to back a project. The capability to share the project video outside of the crowdfunding site will draw potential backers and increase individuals' intent to back before they even get to the project page. Second, providing a page design that facilitates presentation of product details will benefit projects. The

product quality should be emphasized in content areas like design and technology. Projects will more likely get more backers if they provide central route arguments on their page or in their video.

The most important practical implication for design and technology project creators is to ensure they have a quality product. The product quality seems to be more important than presenting your product well. Also, project creators should emphasize central route arguments for backing their project or using their product. This would mean describing uses and specifics of the product, rather than having attractive people hold the product or celebrities endorse it. Similarly, provide ample information about the product so backers can see the intrinsic benefits. Intrinsic motivations seem to be more influential.

**Limitations**

There were several limitations of this study. First, these results came from a larger exploratory study. The larger study consisted of many more constructs than were used in this study, so the items were not specifically designed for the research question of this study. If the study had been designed specifically for this research question, we might have designed it differently than it was for exploration. For example, we would have questions specifically designed for each construct. Also, through exploring the data before formulating our hypotheses we have caused an issue of $p$ hacking.

Secondly, our survey took a sample from AMT, which may not be representative of Kickstarter or another crowdfunding platform. This study shows the tendencies of our sample from AMT, whereas a study of crowd funding users would show the tendencies of the crowd funding users. The availability of the AMT participants is much higher, and AMT had advantages over other sample options.

Finally, this study used only three project videos. This could lead to results that don't generalize to all projects. Also, the videos should come from a variety of project types, not just design and technology. Using a wider variety of project types would diminish any effect caused by the type of products, and get closer to the effect of the crowdfunding process and platform. Our results suggest that intrinsic motivations are more important to backers, but this could have been a result of this limitation.

**Future research**

We have several suggestions for future research after completing this study. To start, future research should replicate this study. In addition, more videos from a variety of project types should be included in further studies. The survey should take into account the different types of rewards, that aren't always a product. Some projects are charitable, and others have rewards that aren't products. For example, if a backer gives enough then they would be able to participate in some way with the project.

Studies on use of crowdfunding platforms like Kickstarter should examine the different aspects of the crowdfunding site. There are various tools for backers and project creators, like a comment section, that may reveal insights into the process of crowd funding. Research on these aspects of the project page will give valuable insight to both the crowdfunding platform and project creators.

There should be further investigation of motivations for backing reward based crowdfunding projects. Motivation is an important aspect of consumer research and should be extended into the area of crowdfunding to help explain the process of obtaining backers. Our result of intrinsic motivations having a stronger effect should be explored with different project types.

**Conclusion**

The need for cognition represents the psychological need to approach cognitive scenarios (Cacioppo & Petty, 1984). The need for cognition is related to the personal tendency towards the central or peripheral routes of ELM. We predicted that this tendency would positively affect a participant's level of intrinsic or extrinsic motivation regarding a product. These levels of intrinsic and extrinsic motivation would then affect the view of product quality and argument quality. Finally, that the product quality and argument quality would affect the participant's intent to back the project.

Our results support most of our hypotheses and showed that personal tendency towards the central route does increase an individual's intent to back a project. We also discovered that intrinsic motivations and product quality have a stronger effect than extrinsic motivations and argument quality respectively. These results should be investigated further using additional product types. This study was a small step to better understanding the process of crowdfunding. The study of reward based crowdfunding sites like Kickstarter will bring valuable insights to small business ventures and the sites themselves.

# Appendix A

Table 3. Kickstarter research

| Citation | Research Question | Findings |
| --- | --- | --- |
| Mollick, 2014 | What project attributes increase the likelihood of funding success? | Funding success increases when: Featured by Kickstarter, more Facebook friends, has appropriate background, and has outside endorsements. |
| Mollick & Kuppuswamy, 2014 | Better describe the nature of crowdfunding | Social capital, preparedness, and geography are related to funding success. Projects usually barely succeed or clearly fail. Fraud is rare but late delivery is common. |
| Marom, Robb, & Sade, 2014 | Is Kickstarter a good opportunity for female entrepreneurs? | Slightly more women participate than the entrepreneurial norm in the US. Women have higher rates of funding success than men. Men contribute less to female led projects. |
| Davis & Webb, 2012 | What signaling is effective on funding performance? | External association signals may be most effective in this context. Product discounts, product quality, and managerial experience signals are also effective. |
| Gerber, Hui, & Kuo, 2012 | How and why do crowdfunding platforms work? | Qualitative results regarding motivations for creators and funders to participate. Connecting with others is a motivation for both. |

| | | |
|---|---|---|
| Colombo et al., 2015 | Why do some projects get large numbers of early backers? | Creating internal social capital within the platform by backing and engaging in the community before a project launch may increase early backers. These early backers then increase chance of funding success. |
| Calic, Purdue, & Mosakowski, 2013 | How do social conditions influence entrepreneurial opportunities. | Projects focusing on the collective good are more successful. Solving environmental issues has a greater affect than solving social issues. |
| Kuppuswamy & Bayus, 2015 | How does the knowledge of other's backing affect backing? | Bystander effect creates a diffusion of responsibility. This effect diminishes when the project approaches its closing date. |
| Agrawal et al., 2014 | How can economics explain online crowdfunding? | Funding is not geographically constrained. Funding for projects is highly skewed and may creating herding. Crowdfunding may substitute for traditional sources. |

# Appendix B

**Video Survey**

Video displayed here.

If the video does not load, you can download it here for viewing: https://...

Estimate the age of the people that appear to be members of this Kickstarter project creation team. Do not include those that do not seem to be part of the Kickstarter project creation team (actors, customers, interviewees, etc).

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Number of team members who appear to be under 40 years of age: | ❍ 0 | ❍ 1 | ❍ 2 | ❍ 3 | ❍ 4 | ❍ 5 | ❍ 6 | ❍ 7 | ❍ 8 | ❍ 9 | ❍ 10 |
| Number of team members who appear to be 40 years of age or older: | ❍ 0 | ❍ 1 | ❍ 2 | ❍ 3 | ❍ 4 | ❍ 5 | ❍ 6 | ❍ 7 | ❍ 8 | ❍ 9 | ❍ 10 |

Please rate the principal project creation team member that appears in the video. Only mark N/A if no team member is shown. The main team member in the video was:

| | N/A | Strongly Disagree | Disagree | Somewhat Disagree | Neither Agree nor Disagree | Somewhat Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|---|---|
| knowledgeable on this topic | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| an expert in Kickstarter projects | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| likely knows many people who will support the project | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| trustworthy | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| credible | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| an expert on this topic | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| motivated to succeed | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| committed to the project | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| passionate about the project | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| able to deliver on project promises | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| part of an existing business with sales prior to Kickstarter | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

Please consider your motivation for using the product depicted in the video. Please focus on the product, rather than how it is presented and rate the following statements:

| | Strongly Disagree | Disagree | Somewhat Disagree | Neither Agree nor Disagree | Somewhat Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|---|
| I would enjoy using the product | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I would value using the product | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I would feel good using the product | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Using the product would make life easier for me | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I would be motivated by the advantages that I could experience from using the product | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I would be motivated by the recognition I could earn from other people for using the product | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I would feel that I'm learning something by using the product | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I would be motivated to be the first of my friends to have this product | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I would be motivated to be the first of my friends to have backed this project | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Please consider the product depicted in the video. Please focus on the idea, rather than how it is presented and rate the following statements:

| | Strongly Disagree | Disagree | Somewhat Disagree | Neither Agree nor Disagree | Somewhat Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|---|
| I would buy this type of product | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I would buy this product | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| The product seems to be high quality | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| The product would need further refining before selling in a store | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| The product is a clear advance over related products | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I've never seen a product like this before | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

The information provided in the video was:

| | Strongly Disagree | Disagree | Somewhat Disagree | Neither Agree nor Disagree | Somewhat Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|---|
| informative | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| helpful | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| valuable | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| persuasive | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Please rate the problem and the technology presented as the solution. Please focus on the problem and solution, rather than how it is presented:

| | Strongly Disagree | Disagree | Somewhat Disagree | Neither Agree nor Disagree | Somewhat Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|---|
| I am familiar with this technology | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I have the problem that this project is solving | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I'm interested in solving the problem that this project solves | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Project creators can provide various reasons that Kickstarter backers (supporters of projects) should back a project. Please rate the video according to how it emphasizes that:

| | Strongly Disagree | Disagree | Somewhat Disagree | Neither Agree nor Disagree | Somewhat Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|---|
| Support is needed for project success | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Rewards provided are worth the backing | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| The project will benefit society or the environment | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| The project creator has contributed to the Kickstarter community in the past | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Please rate the video presentation according to video quality. Only mark N/A if there is no speaking in the video.

| | N/A | Strongly Disagree | Disagree | Somewhat Disagree | Neither Agree nor Disagree | Somewhat Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|---|---|
| The speaker is understandable | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Spoken parts seem to have been rehearsed | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| The video seems to be professionally recorded and edited | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Kickstarter project ideas can be presented in various ways. To what extent does the video:

| | Strongly Disagree | Disagree | Somewhat Disagree | Neither Agree nor Disagree | Somewhat Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|---|
| give a story about how the project started | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| demonstrate the use of the product | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| show prior prototypes | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| show design drawings | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| demonstrate the process of building or testing the product | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| explain the next step in the project | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| validate the product with awards, patents or contests | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| validate the product with testimonials or reactions from others | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| explain a prior Kickstarter campaign by the project creator(s) | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| use humor | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| seem entertaining | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| seem amusing or funny | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

If you had the needed money, and if it would not alter any of your other purchase decisions. Please rate the following statements:

| | Strongly Disagree | Disagree | Somewhat Disagree | Neither Agree nor Disagree | Somewhat Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|---|
| I would back this Kickstarter project before the funding period ended | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I would back this Kickstarter project in the near future | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I intend to back this Kickstarter project | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I would share this video with my friends | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Now please rate your overall expectation of project success, based on the following background information and what you've seen from the video. Of the 20,000 technology and design projects launched on  Kickstarter, about 29% are successfully funded (11% raise less than  $10,000, 14% raise $10,000-99,999, and 4% raise more than $100,000). The  average number of backers is 40.

How many people do you think would back this project?

How much money do you think this product is worth?

How much money do you think they will raise for the project?

How much money would you spend on this product?

# Appendix C

**Factor Analyses**

Table 4. Intent

| Item name | Factor loading | Item wording |
|---|---|---|
| Back before end | 0.9678 | I would back this Kickstarter project before the funding period ended |
| Back soon | 0.9751 | I would back this Kickstarter project in the near future |
| Back | 0.8815 | I intend to back this Kickstarter project |

Table 5. Product quality

| Item name | Factor loading | Item wording |
|---|---|---|
| High quality | 0.6633 | The product seems to be high quality |
| Advanced | 0.6633 | The product is a clear advance over related products |

Table 6. Argument quality

| Item name | Factor loading | Item wording |
|---|---|---|
| Informative | 0.8588 | The information provided in the video was: informative |
| Helpful | 0.8846 | The information provided in the video was: helpful |
| Valuable | 0.8864 | The information provided in the video was: valuable |
| Persuasive | 0.7517 | The information provided in the video was: persuasive |

*Note.* These items were adapted from Bhattacherjee and Sanford (2006).

Table 7. Intrinsic motivation

| Item name | Factor loading | Item wording |
|---|---|---|
| Enjoy | 0.9655 | I would enjoy using the product |
| Value | 0.9692 | I would value using the product |
| Feel good | 0.9083 | I would feel good using the product |

Table 8. Extrinsic motivation

| Item name | Factor loading | Item wording |
|---|---|---|
| Easier | 0.8537 | Using the product would make life easier for me |
| Advantages | 0.8537 | I would be motivated by the advantages that I could experience from using the product |

Table 9. Previous factor loadings for extrinsic motivation

| Item name | Factor loading |
|---|---|
| Easier | 0.8129 |
| Advantages | 0.8561 |
| Recognition | 0.6774 |
| Learning* | 0.5714 |

* Item(s) removed because of low loading

| Item name | Factor loading |
|---|---|
| Easier | 0.8565 |
| Advantages | 0.8651 |
| Recognition | 0.5855* |

* Item(s) removed because of low loading

Table 10. Need for Cognition scale

| Item name | Factor loading | Item wording |
|---|---|---|
| 1 | 0.7661 | I would prefer complex to simple problems. |
| 2 | 0.8814 | I like to have the responsibility of handling a situation that requires a lot of thinking. |
| 3* | 0.8180 | Thinking is not my idea of fun. |
| 4* | 0.8054 | I would rather do something that requires little thought than something that is sure to challenge my thinking abilities. |
| 12* | 0.7611 | Learning new ways to think doesn't excite me very much. |
| 14 | 0.7479 | The notion of thinking abstractly is appealing to me. |

* Reverse coded

Table 11. Previous factor loadings for the Need for Cognition scale

| Item name | Factor loading |
|-----------|----------------|
| 1 | 0.7790 |
| 2 | 0.8705 |
| 3 | 0.7945 |
| 4 | 0.8147 |
| 5* | 0.7445 |
| 6* | 0.7127 |
| 7* | 0.7359 |
| 8* | 0.6397 |
| 9* | 0.6688 |
| 10* | 0.7454 |
| 11* | 0.7373 |
| 12 | 0.8103 |
| 13* | 0.6375 |
| 14 | 0.7588 |
| 15* | 0.7463 |
| 16* | 0.5386 |
| 17* | 0.7160 |
| 18* | 0.4823 |

* Item(s) removed because of low loading

# Appendix D

**Demographics**

What is your Gender?
○ Male
○ Female
○ Other

What is your age?
_____ Age in years

How many years of work experience do you have?
○ 0 years
○ 1-4 years
○ 5-9 years
○ 10-19 years
○ 20 or more years

What is your highest level of completed education?
○ Secondary School
○ High School
○ Some University
○ Associate Degree
○ Bachelor's Degree
○ Master's Degree
○ PhD / Doctoral Degree

With what race(s) do you identify yourself?
❑ White / Caucasian
❑ Black / African American
❑ Native Hawaiian / Other Pacific Islander
❑ Asian
❑ American Indian / Alaska Native
❑ Other

What is your status?
○ U.S. Citizen
○ U.S. Resident
○ International with U.S. Visa
○ Not in the U.S.

What is your zip code?

With regard to English language, how well do you understand spoken English?
- ❍ Very Poor
- ❍ Poor
- ❍ Fair
- ❍ Good
- ❍ Very Good

With regard to English language, how well do you read English?
- ❍ Very Poor
- ❍ Poor
- ❍ Fair
- ❍ Good
- ❍ Very Good

With regard to English language, how well do you write English?
- ❍ Very Poor
- ❍ Poor
- ❍ Fair
- ❍ Good
- ❍ Very Good

There are more than 25 or more books in my home now.
- ❍ Strongly Disagree
- ❍ Disagree
- ❍ Neither Agree nor Disagree
- ❍ Agree
- ❍ Strongly Agree

There is a variety of magazines and other reading materials in my home now.
- ❍ Strongly Disagree
- ❍ Disagree
- ❍ Neither Agree nor Disagree
- ❍ Agree
- ❍ Strongly Agree

Rewards-based crowdfunding websites, such as Kickstarter and Indiegogo allow people to submit a written description and video explaining a project for which they seek financial backing from people who see their project on the crowdfunding website. Backers receive rewards, often a promise to deliver the product being developed by the project team.

How many videos from rewards-based crowdfunding websites, such as Kickstarter and Indiegogo, have you seen?

- ⭕ 0
- ⭕ 1-5
- ⭕ 5-20
- ⭕ More than 20

How many projects from rewards-based crowdfunding websites, such as Kickstarter and Indiegogo, have you personally backed?

- ⭕ 0
- ⭕ 1-5
- ⭕ 5-20
- ⭕ More than 20

Have you ever created a Kickstarter project of your own?

- ⭕ Yes
- ⭕ No

# Appendix E

**The Need for Cognition scale**

Please rate the following statements according to how they describe yourself.

Please rate the following statements according to how they describe yourself.

| | Strongly Disagree | Disagree | Somewhat Disagree | Neither Agree nor Disagree | Somewhat Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|---|
| I would prefer complex to simple problems. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I like to have the responsibility of handling a situation that requires a lot of thinking. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| Thinking is not my idea of fun. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I would rather do something that requires little thought than something that is sure to challenge my thinking abilities. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I try to anticipate and avoid situations where there is likely a chance I will have to think in depth about something. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I find satisfaction in deliberating hard and for long hours. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I only think as hard as I have to. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I prefer to think about small, daily projects to long-term ones. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I like tasks that require little thought once I've learned them. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| The idea of relying on thought to make my way to the top appeals to me. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I really enjoy a task that involves coming up with new solutions to problems. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| Learning new ways to think doesn't excite me very much. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I prefer my life to be filled with puzzles that I must solve. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| The notion of thinking abstractly is appealing to me. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I feel relief rather than satisfaction after completing a task that required a lot of mental effort. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| It's enough for me that something gets the job done; I don't care how or why it works. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |
| I usually end up deliberating about issues even when they do not affect me personally. | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ | ❍ |

# Appendix F

**Normality Charts**
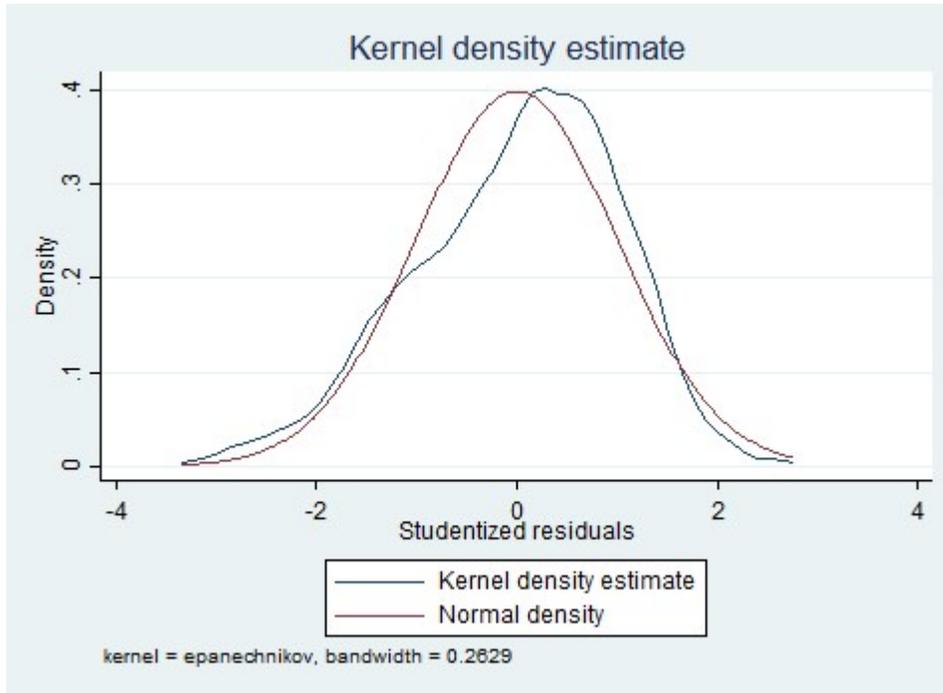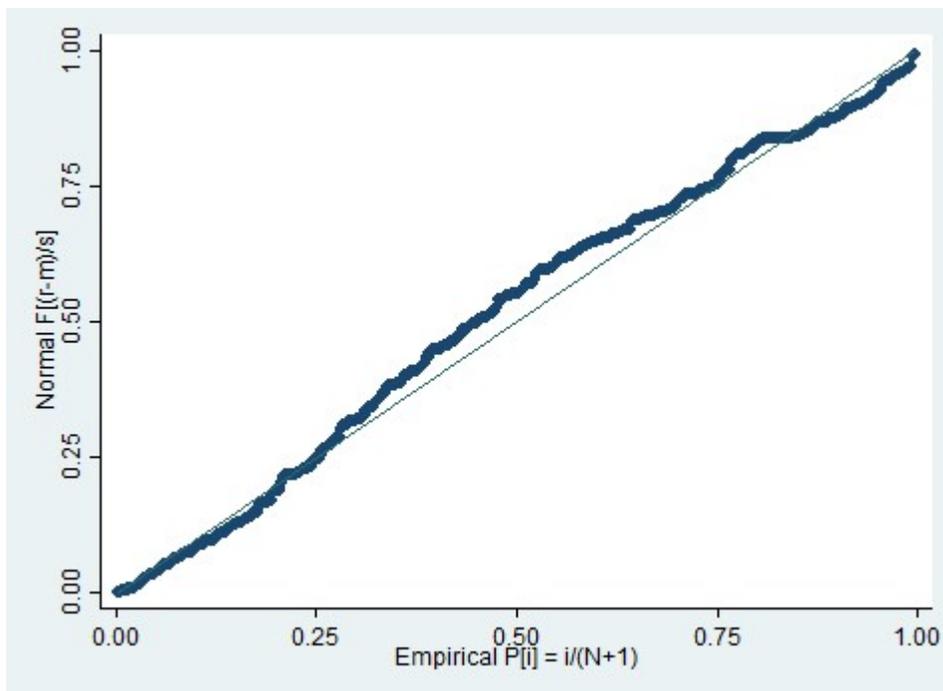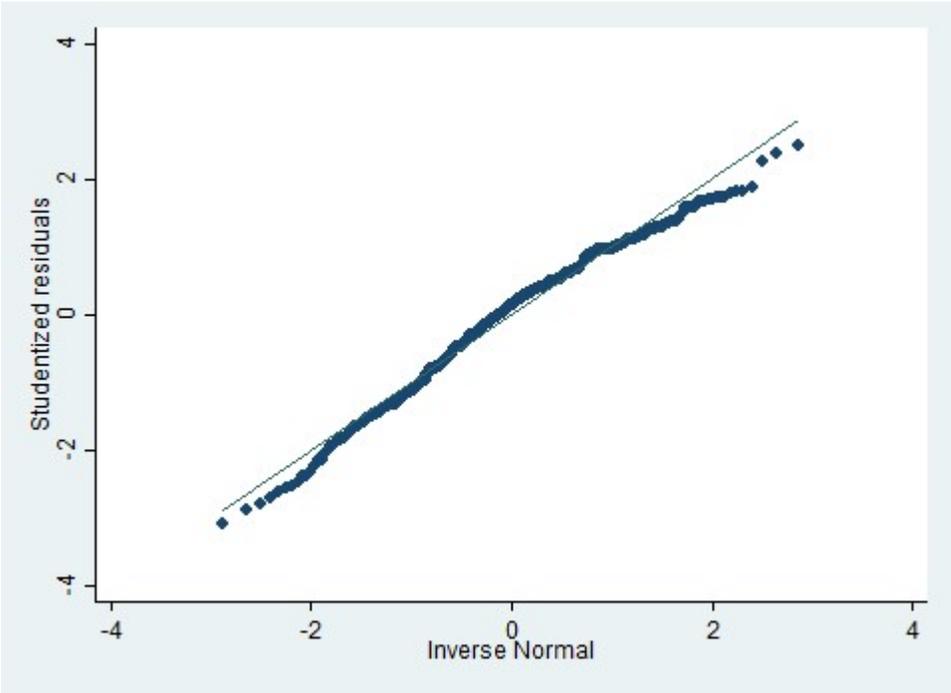
Figure 3. Kernel density



Figure 4. P norm

Figure 5. Q norm

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