Master Thesis

Valorizing the contribution of participants during ideation contests, to maintain the continuous participation intention

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Preface

Dear reader,

I present to you, my Master Thesis, which is my final task before completing the Master specialization in Marketing at the Radboud University. I have learned a lot in the past six months, particularly about the entire process of writing a Master Thesis.

Firstly, I would like to thank my supervisor Hanif Widyanto for his feedback and support. Secondly, I would also like to thank my second examiner Prof. Bas Hillebrand, and my peer students for their feedback throughout the research process,.

Lastly, I would like to thank my family and friends, for their help, interest and support, which has meant a lot to me.

Jesse Arntz
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Abstract

This research examines the levels of recognition, contribution and social- recognition derived from the developed solver valorization theory by Hanine and Steils (2019), regarding the continuous intention to participate in future ideation contests. Currently, participants in ideation contests have high expectations of their contribution and a strong sense of ownership. This makes it crucial to include proper recognitions within the ideation contest. Maintaining the continuous intention to participate by proper recognition, ensures the success of ideation contests, as it results in quality ideas and unforeseen solutions. A scenario-based experiment has been conducted using an online survey, which resulted in 205 valid respondents. The results show that the presence of social recognition in ideation contests is marginally significant. This suggests that it positively affects the continuous intention to participate in future ideation contests. The presence of contribution recognition in ideation contests was found to be not significant. However, the interaction effect of contribution- and social recognition in ideation contests was marginally significant, which indicates a positive effect on the continuous intention to participate in future ideation contests. The insights gained from this research contribute to understanding the management practice of valuing participants' contributions in ideation contests.

Key words: Ideation contests, Solver valorization, Contribution recognition, Social recognition, Continuous intention to participate

Content

1. Introduction

1.1 Context

Creating, developing, and communicating new ideas is vital for every organization (Miyazaki et al., 2022). In particular, because it is a source of creativity that allows innovation development for organizations (Bharadwaj & Menon, 2000; Kourtit & Nijkamp, 2012; Litchfield et al., 2015). Different kinds of industries have obtained valuable ideas by outsourcing idea generation in the form of ideation contest (Jiang & Wang, 2020; Miyazaki et al., 2022). Moreover, they describe ideation contests as a method to attract consumers by asking them to establish innovative ideas about products or specific solutions for a particular case. Since ideation contests are often held entirely online and facilitated by digital platforms, they are an economically attractive instrument. Successful cases of ideation contests include organizations like Dell, IBM and Starbucks which obtained and implemented participants' ideas in practice.

With this consumer involvement during the idea generation process, it can be argued that today's consumers have the role of both producer and consumer in creating firms' value (Ballantyne & Varey, 2008). Initially, this emerged from the concept of co-creation, a method in which organizations actively collaborate with multiple stakeholders, such as customers, companies or communities. This active collaboration is used throughout the entire development process of new products, services, knowledge or experiences (Galvagno & Dalli, 2014). In line with co-creation, ideation contests are a commonly used form, including a competitive format, a timeframe and being focused on gathering ideas and solutions for the specific challenge of an organization. This competitive format entails that participants are competing against each other for potential rewards.

Overall, ideations contests contain a simple, practical and cost-effective method that allows creative ideas and out-of-the-box solutions through the involvement of a large community (Jiang and Wang, 2020). In addition, Gatzweiler et al. (2017) described this method as an opportunity to access a worldwide pool of talented people. The use of ideation contests by organizations range from industrial to consumer goods and from general and abstract tasks to more concrete and specific ones. Moreover, ideation contests are a growing method among marketers in generating creative ideas (Dargahi et al., 2021; Lin et al., 2022). In fact, the presence of the internet web and social media enables them to easily reach out to potential participants and engage with them (Filieri, 2013; Lin et al., 2022).

Looking at the content of an ideation contest, Ihl et al. (2012) describe that there are mainly two activities for participants. First, it includes submitting ideas or solutions regarding the contest's aim. Here, participants must follow the guidelines, which are the requirements set out by the organization. These requirements could contain creativity, feasibility, originality or potential impact of the participants' contribution. Also, the requirements need to be structured in such a way that it will provide realistic and implementable ideas or solutions (Gamber et al., 2022). The second activity concerns evaluating, commenting and improving each other's ideas (Ihl et al., 2012). This engagement of participants takes place on facilitated digital platforms like online forums or social media accounts.

Ideally, the ideation contests are mainly open to a wide range of consumers to participate. Kireyev (2020) described this as heterogeneity, which means that the joined participants will have different skills and experiences, resulting in more diverse ideas. As already noted, this is possible because online platforms allow to reach a large, diverse group, and the opportunity to participate entirely online makes it accessible (Koh & Cheung, 2022). Furthermore, Steils and Hanine (2016) argued that the heterogeneity would include added value, as it enables less experienced participants to improve their skills by learning from the engagement with other participants.

1.2 Problem framed in literature

In the paragraph above, the context of ideation contests has been addressed, which shows its potential to enhance an organization's innovation capacity for developing new products or services. Despite its advantages, in literature, a problem has been found with ideation contests. This issue is what this research is based on and will be explained below.

First, Hanine and Steils (2019) argued that online ideation contests provided a change in the relationship between the participants and the organization. This change entails the direct and interactive exchange between the participant and organization during ideation contests, whereas the level of interaction and collaboration is limited in traditional consumer involvement activities such as brainstorm sessions or focus groups (Nambisan & Baron, 2007). In addition, Saha et al. (2020) described that ideation contests ensure a more inclusive exchange of ideas, which breaks down hierarchical barriers as organizations relinquish their control of idea generation to the participants. Furthermore, the high level of interaction during ideation contests fosters a sense of ownership among participants and creates high expectations (Herter et al., 2023). Participants are empowered to share ideas and solutions which are unique from their perspective (Gatzweiler et al., 2017). Therefore, they do not want to be considered an

insignificant source but rather a creative collaborator with the ability to make a meaningful contribution to the development process of innovative products and services. This emphasizes the need for careful management in valuing a participant's contribution to an ideation contest.

Participants in ideation contests develop a feeling of ownership, driven by the belief that their involvement is the same as a personal investment in the ideas they contribute (Gatzweiler et al., 2017). The personal investment of the participants entails their time, effort and creativity, which they consider as their intellectual property. As a result, Bockstedt et al. (2021) concluded that participants expect a return on investment on their contribution such as enhancement of their reputation or future career opportunities.

Conversely, shortcomings in valuing participants' contributions could create negative effects among participants, such as the feeling of being exploited (Hanine & Steils, 2019; Ihl et al., 2019; Calvanogli et al., 2014). In the absence of proper recognition or compensation, these negative emotions may cause participants to express their negative experiences by word of mouth, thereby potentially damaging an organizations' reputation. Finally, in the context of the considerable value of ideation contests, insufficient or inadequate recognition reduces their willingness to participate in future ideation contests. This is alternatively named as the continuous intention to participate and is considered of significant value for organizations using ideation contests.

The importance of the continuous intention to participate is also highlighted by Haro et al. (2014), who examined the need for organizations to structurally innovate in order to gain competitive advantage. This is particularly important for organizations in dynamic markets, characterized by rapidly changing preferences and needs of consumers. These types of organizations may heavily rely on the regular use of ideation contests. Steils & Hanine (2022) demonstrated that a greater amount of contributions by sustained participants increases the success of ideation contests. Similarly, Kirevev (2020) stated that continuous participation will also provide more high-quality ideas and unforeseen, high-impact solutions.

By including proper recognition it is possible to deal with participants' needs and safeguard their willingness to participate in future ideation contests. There are various types of recognition or compensation that organizations can use to value a participant's contribution. Firstly, an often used type of recognition are monetary or non-monetary rewards (Jiang & Wang, 2019). For example, monetary rewards can include cash prizes and non-monetary rewards may consist of a discount or a gift card within the participant's area of interest. Secondly, a less typical form of recognition of the participants' contribution is creating a community within the ideation contest (Saha et al., 2020). A community creates interaction

between the participants by evaluating, commenting and improving each other's ideas. It could also include the option to vote on their favorite ideas. Although a less obvious type of recognition, the sense of community will provide a feeling of belonging among the participants which is argued as effective in valuing a participant's contribution (Salgado et al., 2020).

1.3 Objective

After explaining the problem that addressed this research, the objective is to contribute to the understanding of the management practice of valuing the participants' contribution during ideation contests, and its influences on the continuous intention to participate in future ideation contests. To achieve this, two recognition levels: contribution- and social of the solver valorization theory by Hanine and Steils (2019), will be examined. The contribution recognition level entails valuing the participants' contribution by rewarding and the social recognition level represents the recognition by interaction within a community.

Normally, the solver valorization theory by Hanine and Steils (2019) entails three levels of recognition: basic, contribution and social. The basic level implies the minimum recognition for participants' presence in ideation contests. This recognition is maintained by providing information, about the future use of contributions, intellectual property rights and judging criteria and represents the transparency and fairness of the ideation contests. The researcher assumed that this level of recognition is a given in ideation contests and must always be present, to sustain the continuous intention of participants. Hence, this recognition level will be not considered in this research. Although this recognition level is part of the solver valorization by Hanine and Steils (2019), it will be addressed within the theoretical background of this research.

They developed this theory by qualitative research, where it represents participants' needs of how they intend to get valued for their contribution in ideation contests. The aim of these levels, is that it influences the continuous intention to participate. Particularly, Hanine and Steils (2019) claimed that if these level are absent in ideation contests, it negatively influences their willingness to participate in the future. Hence, it makes a significant theory for the management practice of valuing the participants' contribution and in the context of this research.

Furthermore, to determine the effect of the recognition levels on the willingness to participate in future ideation contests, it will be measured using continuous intention to participate. This approach is chosen because measuring actual performed behavior is not applicable for this study, because it is (too) time consuming and complex to analyze. Therefore, the continuous intention will be used as it predicts participants' behavior, and shows their

motives and decision making process in their willingness to participate in future ideation contests (Jain et al., 2017; Rehman et al., 2019).

1.4 Research question

Within this research, the following research question is intended to be answered:

Does the presence of contribution- and social recognition positively affect the continuous intention to participate in future ideation contests?

A 2x2 experimental design will be performed to address this research question, as it enables the investigation and comparison of the contribution and recognition level of Hanine and Steils (2019) at the same time. Additionally, the hypothesis described in the next chapter will be answered by the researcher. To achieve this, scenarios for an ideation contest format have been established, regarding the contribution- and social recognition levels. Finally, the aim is to see whether there are causal relationships between the contribution- and social recognition levels of Hanine and Steils (2019) and the continuous intention of the participants to participate in future ideation contests.

1.5 Relevance

1.5.1 Theoretical

By examining the recognition levels, contribution- and social of the solver valorization theory by Hanine and Steils (2019), this research aims to contribute to the understanding of the management practice of valuing participants' contribution, and its influence on the continuous intention to participate in future ideation contests. This contribution is considered as valuable for literature, as these causal relationships have been less explored in previous research. Additionally, the investigation into the combined effect of these recognitions regarding the continuous intention to participate, have also not been thoroughly researched. Moreover, Steils and Hanine (2022) argued that gaining insights about how consumers perceive a certain design of ideation contests, is valuable for literature.

Particularly, in literature it is highlighted that knowledge regarding proper recognition is absent regarding participants' contribution in ideation contests (Galvagno & Dalli, 2014; Hanine & Steils, 2019; Ihl et al., 2012). At the same time, it is emphasized that such recognition, contribution and social, has influence on the continuous intention to participate in future ideation contests (Hofstetter et al., 2019; Kireyev, 2020; Segev, 2020).

1.5.2 Practical

Besides its theoretical relevance, this research also holds practical relevance for organizations that intend to regularly use the method of ideation contests for idea generation regarding innovation development. First, this experimental research provides findings about potential proper recognitions that could influence the continuous intention to participate in future ideation contests. These insights are crucial, as Segev (2020) argued that currently, most participants do not receive proper recognition or any recognition at all for their contribution in ideation contests, which participants notably see as their personal investment. Furthermore, Lin et al. (2022) argued that it is essential that organizations understand the right mechanisms, including the effective management practice of valuing the participants' contribution. Steils and Hanine (2022) stated in line, that organizations need to manage each stage of an ideation contest effectively to sustain the continuous intention of participants to ensure the overall success. A greater amount of contributions will lead to high-quality ideas or unforeseen solutions for organizations (Kireyev, 2020), that are valuable during the innovation development process of new products and services.

The scenarios within this research are established regarding the food industry. This choice is made by the researcher, because organizations of the food industry operate in general within the dynamic market, which includes fast consumer demand changes and preferences (Pipatprapa et al., 2016). To maintain a competitive advantage in such markets and moreover to survive, it is important for the food industry to have the capability that allows structural innovation were ideation contests can make a valuable contribution into.

1.6 Outline of thesis

This thesis consists of five chapters. After the introduction, the second chapter will contain the theoretical background, which will describe the concepts that holds the foundation of this research, including the hypothesis and conceptual model. Thereafter, the third chapter will provide the research method, explaining the experimental design, that will be used to answer the hypothesis. The fourth chapter presents the findings of the study. Finally, a conclusion and discussion follow in chapter five, as implications will get discussed and recommendations for future research are made.

2. Theoretical background

This chapter presents the theoretical background of this research. First, the concept of ideation contest will be explained, followed by the continuous intention to participate in future ideation contests. Thereafter, the solver valorization theory by Hanine and Steils (2019) will be elaborated upon, including the recognition levels and hypotheses. Finally, the conceptual model will be presented.

2.1 Ideation contests

The first concept of this research is ideation contest, which Koh (2019) describes as crowd-based competitions that allow solution-seeking organizations to solicit innovative ideas or solutions from external individuals. In this research, these external individuals are consumers. Additionally, Jiang and Wang (2020) describe ideation contests as a commonly used method in both public and private sectors to generate new or problem-solving ideas for the development of products or processes. During such contests, the organization outsources the task online by an open call to a distributed population. The participants will then compete against each other and the one with the best solution gets recognized (Ihl et al., 2021; Terwiesch & Xu, 2008).

The organizations that initiate an ideation contest are named as seekers, as the participants that creates ideas and solutions for a formed problem by the organization are called as solvers (Koh & Cheung, 2022). The participants are characterized by their diverse backgrounds, expertise and skills which is named as solver heterogeneity (Kireyev, 2020). It is beneficial because it leads to diverse ideas, out-of-the box thinking and market insights. Additionally, this diversity of participants, which is facilitated by the online accessibility (Koh & Cheung, 2022), provide the opportunity for less experienced participants to enhance their skills by learning from the engagement with other participants.

Originally, ideation contests can be considered as a form of co-creation. The concept of co-creation is described by Galvagno and Dalli (2014) as a method where organizations actively collaborate with multiple stakeholders, as customers, companies or communities, throughout the entire innovation development process for new products and services. This collaboration is evident in ideation contests, where organizations solicit innovative ideas or solutions from a broad range of consumers within a competitive format and timeframe. Furthermore, as ideation contests are focused on idea generation, the outcome of these contests can add value to other co-creation activities, such as concept development and launching (Bhuiyan, 2011).

The involvement of consumers in ideation contests demonstrates the organizations' acknowledgement of the provided by consumers in developing new products or services (Bilstein et al., 2022). This involvement allows organizations to have access to new knowledge concerning consumers' latent needs (Gatzweiler et al., 2017; Guine et al., 2020). Latent needs are according to Bruggeman et al. (2023), the unrecognized needs of consumers that have not yet been addressed in existing products or services and offer valuable innovation opportunities. It increases the likelihood of consumer acceptance of the innovation, as the organization are more likely to consider their needs and preferences. Moreover, including these needs reduces the risk of product failure because potential customers can participate in ideation contests (Miyazaki et al., 2022; Tu et al., 2014).

As just noted, ideation contests enable the collection of latent consumer needs. Primarily, these needs are valuable for addressing the challenges of dynamic markets. According to Ji and Han (2022), industries acting in dynamic markets must deal with rapid changes in consumer preferences and needs, which subsequently influence the market trends. Examples of such industries with dynamic markets include food, technology, and retail. Furthermore, Barrales-Molina et al. (2014) argued that it is crucial for organizations to develop dynamic marketing capabilities, as it contributes to the flexibility to respond to the fast changing market conditions. This makes ideation contests an applicable method for organizations in dynamic markets to gather ideas and solutions that allows for innovation (Pipatprapa et al., 2016).

Additionally, conducting an ideation contest can facilitate relationships with participating consumers. Maintaining this relationship is crucial, as they create a valuable source of external opportunities and enhance innovation capacity (Saha et al., 2020; Vellera et al., 2023). Moreover, long-term relationships enable organizations to innovate structurally, which is valuable in achieving competitive advantage (Haro et al., 2014). Finally, such relationships ensure that the ideas and solutions generated by the ideation contests are relevant to the organization's specific innovation needs.

Organizations must understand the proper mechanisms within an ideation contest (Lin et al., 2022). These mechanisms mainly entail the challenge instructions, judging criteria, community engagement, and valuing participants' contributions. Steils and Hanine (2022) describe the careful management of these mechanisms as effective creative crowdsourcing, which implies the extent in which ideation contests are successfully managed across all stages. Furthermore, maintaining the continuous intention of participants for future ideation contests

is possible when the ideation contests is managed successfully, which will subsequently lead to a greater amount of high quality or unforeseen contributions (Kireyev, 2020).

However, as noted in the literature, maintaining participants' continuous intention to participate in future ideation contests for ensuring the success is challenged by Hofstetter et al. (2018). They hold a contradictory perspective on this finding, as they state that an increase in the number of participants also leads to increased competition among participants, thereby decreasing the probability of winning with an individual contribution. Therefore, participants become less motivated to exert sufficient effort in addressing the ideation contests' challenge, which harms their innovation performance. This finding is important to consider, as it undermines the goal of organizations to attract as many participants as possible, to ensure of the success of an ideation contest (Kireyev, 2020).

2.2 Continuous intention to participate

The second concept of this research is the participants' continuous intention to participate in future ideation contests. This concept mainly represents the ongoing willingness of participants to engage in future ideation contests (Hanine & Steils, 2019 and reflects their motivation and interest to participate in such activities. Additionally, Zheng et al. (2011) describe continuous intention to participate, as the long-term commitment and sustained participation in ideation contests, influenced by the provided task design and personal motivational drivers.

2.3 Solver valorization

The third concept of this research is solver valorization. Based the solver valorization theory developed by Hanine and Steils (2019), it entails the management practice of valuing the participants' contribution in an ideation contest, which can be achieved through recognition. The theory addresses the participants' needs in how they intend to be valued for their contributions through three levels of recognition: basic, contribution- and social. Moreover, the aim of these levels is that their absence negatively influences participants' willingness to participate in future ideation contests. As noted, the basic recognition level will not be examined during this experimental research but will be addressed in the follow section.

The importance of carefully management of an ideation contest is emphasized based on several factors. First, the participants perceive their contribution in ideation contests as a personal investment, as it involves their problem-solving skills, expertise, time and effort. Additionally, active involvement and interaction foster their sense of ownership (Herter et al.,

2023) because they contribute to the organization, with their own ideas that are unique from their perspective (Gatzweiler et al., 2017). Therefore, they want to be proper recognized for their contribution, and valued as someone capable of making a valuable contribution. Second, recognizing participants' contribution can be done monetary or socially and contributes to retaining participants within the ideation contest (Hofstetter et al, 2018; Kireyev, 2020; Segev, 2020). If participants feel recognized, it enhances their self-esteem and confidence, and their willingness to participate in future ideation contests (Steils & Hanine, 2017). As noted, the effectiveness of ideation contests depends on participants' continuous intention to participate (Kireyev, 2020; Steils & Hanine, 2022). Third, shortcomings in valuing participants' contributions could negatively influence their continuous intention to participate in future ideation contests, something organizations that use ideation contest want to avoid. Furthermore, it could create negative emotions among participants, making them feel exploited due to the absence of proper recognition (Galvagno & Dalli, 2014; Hanine & Steils, 2019; Ihl et al., 2012). This can result in them sharing their negative experiences by worth of mouth or on online platforms.

From another perspective, the recognitions used within ideation contests to value participants' contributions can be referred as incentives (Deodhar, 2021). Zheng et al. (2020) argued that using incentives can motivate participants, by aligning the incentives with their motives. Based on the Motive-Incentive-Activation-Behavior model (MIAB), it can be assumed that participants will take desired actions, such as maintaining their continuous intention to participate, when proper incentives are included and activate their personal motives.

Incentives can be categorized into two types: intrinsic and extrinsic. Intrinsic incentives, such as socialization, can be created by establishing an community environment because it enables participants to fulfill their motives, such as experiencing fun, pride, satisfaction, and a sense of belonging within the contest community (Füller et al., 2011). Additionally, Füller (2010) describe intrinsic incentives as participants seeing value in the activities within ideation contests, allowing for engagement. Extrinsic incentives can take the form of a prize for the best contribution, that aligns with the participants' motive of striving for monetary rewards (Mount & Martinez, 2014). Participants who prefer extrinsic incentives tend to demonstrate higher competitiveness compared to other participants (Zhang et al., 2022). Participants who prefer extrinsic incentives, focus on the outcome separately from the activities they need to perform. These incentives are primarily rewards, either monetary or non-monetary.

2.2.1 Basic recognition

The fourth concept of this research is basic recognition. This level of recognition represent the first level of the solver valorization theory by Hanine and Steils (2019). They described basic recognition as the minimum recognition for participants' presence and engagement during the ideation contest. The participants' sense of ownership contributes to this type of recognition, implying that they at least want to be recognized for contributing a useful idea (Herter et al., 2023). Therefore, to address this recognition level, organizations must provide clear information in advance about how they will handle the future use of participants' contributions, intellectual property rights, and judging criteria.

In the literature, the concept of basic recognition is not thoroughly discussed. However, Mazzola et al. (2018) argued that it is important to maintain transparency regarding the terms and conditions of participants' intellectual property rights, as it influences their continuous intention to participate in future ideation contests. Additionally, safeguarding intellectual property rights creates a fair and transparent open environment for participants to share their ideas. Being transparent about the terms and conditions of intellectual property rights enhances participants' perceived fairness (Wang et al., 2020). This fairness perception encourages participants' confidence in receiving what they deserve for their personal investment in the ideation contest. Finally, if the participants feel that the platform is a fair place where they receive fair recognition for their efforts, it positively influences their continuous intention to participate (Wang et al., 2020). They believe that ideation contests will benefit them and reduce their concerns about the exploitation of their contributions.

2.2.2 Contribution recognition

The fifth concept of this research is contribution recognition, which represents the second level of the solver valorization theory by Hanine and Steils (2019). They describe this level as the use of both financial and symbolic rewards as acknowledgements of participants' contributions within an ideation contest. Financial rewards imply a sum of money, while the symbolic rewards are designed to align with possible interests of participants, such as a free sample of goods or a company visit. This rewarding approach is a commonly used practice in valuing participants' contribution in ideation contests, as the participant with the idea or solution that provides the highest potential gets rewarded (Ihl et al., 2012; Terwiesch & Xu, 2008). Furthermore, monetary rewards are often used within ideation contests because they positively influence participants' continuous intention to participate (Acar, 2018; Hofstetter et al., 2018; Ihl et al., 2012).

Hanine and Steils (2019) argued that participants are only willing to share their ideas or solutions when they are aware of a potential reward as recognition. Therefore, as noted in the solver valorization section, the use of prizes can be seen as extrinsic incentives. Furthermore, Füller (2010) describe participants who are striving for extrinsic incentives as extrinsically motivated, focusing on the outcome of the ideation contest rather than the collaborative activities during the ideation contest. Extrinsically motivated participants are more goal-oriented, and therefore, they aim to see the utility of the interaction with other participants. These extrinsic incentives create a competitive environment among the participants where their goal is to outperform each other to enhance their chances of winning the reward.

However, because extrinsically motivated participants are goal-oriented, Salgado et al. (2020) argued that it could negatively influence their continuous intention to participate in future ideation contests. The reason for this is that when extrinsic motivated participants get rewarded for their contribution, they have achieved their goal and, therefore, do not have the need to participate in future ideation contests. Monetary recognition results in a short-term motivational effect among them, as these type of participants are more focused on their career prospects and reputation. Additionally, some researchers (Fontana et al., 2015; Hanine & Steils, 2019 Rayna & Striukova, 2015) suggest that using monetary and symbolic rewards as contribution recognition should work well in maintaining the participants' continuous intention to participate.

Hypothesis development

Overall, based on the discussed literature review above, the researcher expects that the presence of the contribution recognition level in ideation contests positively influences the continuous intention to participate in future ideation contests. First, monetary rewarding is a commonly used form of recognition in ideation contests (Acar, 2018; Hofstetter et al., 2018; Ihl et al., 2012) and should positively influence the continuous intention to participate. Second, Hanine and Steils (2019) argued that participants are only willing to share their ideas or solutions when they are aware of a potential reward as recognition. Finally, the combination of monetary and symbolic rewards should work in maintaining the participants' continuous intention to participate. Therefore the first hypothesis will be formulated as follows:

(H1) The presence of contribution recognition positively influences the continuous intention to participate in future ideation contests.

2.2.3 Social recognition

The fifth concept of this research is social recognition, which represents the third level of the solver valorization theory by Hanine and Steils (2019). They describe this level as the need for socialization, belonging, and feeling connected to a community around ideation contests. Consequently, organizations that use the method of ideation contests need to carefully manage such communities. This entails informing participants about the ongoing progress during the ideation contests and creating opportunities for engagement with other participants. For instance, they can actively ask for participants' opinions, which could be in the form of allowing them to vote on their favorite contributions (Hanine and Steils, 2019).

As noted earlier in the paragraph of solver valorization, social recognition can function as an intrinsic incentive by creating a community environment (Füller et al., 2011). Additionally, Mehta et al. (2017) describe social recognition as an incentive that could address the participants' motive for social success, which means the desire to be socially known within the community. Participants striving for intrinsic incentives are intrinsically motivated (Roberts et al., 2014; Salgado et al., 2020). They try to experience a state of pleasure during their participation in ideation contests, which occurs due to the enjoyment of their tasks. Moreover, Füller (2010) mentioned that these participants see value in the interaction activities within ideation contests. They are more experientially oriented and prefer interacting other participants

Saha et al. (2020) argue that using community activities in ideation contests contributes to sustaining the relationship with participants. Mainly, because such activities allow

participants to engage with others by evaluating, commenting and improve each other's contributions. If there are highly skilled participants involved, those who are lacking these can use ideation contests for skill development. In addition, Füller et al. (2011) confirmed that providing community activities within an ideation contest can enhance the relationship with participants, because it provides a sense of community and belonging among participants. Even though participants are competing against each other, they are willing to interact and collaborate, which enhances the sense of community.

However, some researchers have contradictory perspectives on the use of social recognition in an ideation contest (Cheng et al., 2019; Deodhar, 2021; Segev, 2020). Because of the open character, a community could also provide the opportunity for participants to observe the ideas and solutions of others. If the participants perceive this negatively, it could also negatively influence their continuous intention to participate and moreover, it may decrease the quality of the participants' submissions.

Hypothesis development

Overall, based on the discussed literature review above, the researcher expects that the presence of the social recognition level in ideation contests positively influences the continuous intention to participate in future ideation contests. First, it is argued that social recognition can function as an intrinsic incentive by creating a community environment. Therefore, it enables to addressing of participants' motive, the desire to be socially known within the community (Füller et al., 2011; Metha et al., 2017), which probably positively influences their continuous intention to participate. Finally, as it is not a typical form of recognition, the community environment contributes to the sustaining of the relationship with the participant (Füller et al., 2011; Saha et al., 2020) Therefore the second hypothesis will be formulated as follows:

(H2) The presence of social recognition positively influences the continuous intention to participate in future ideation contests.

2.3 Interaction contribution- and social recognition

The final concept of this research is the interaction effect of contribution and social recognition on the continuous intention to participate. Since there is limited knowledge regarding the interaction effect in the literature, some studies have highlighted the interaction of both recognition levels in ideation contests, which will be discussed next.

First, it is argued by different researchers (Wang et al., 2020; Zhang et al., 2022) that participants have various motives for their participation in ideation contests. This could possibly lead to an interaction of both recognition levels. Moreover, Füller et al. (2011) refers this interaction as "coopetition", which entails that participants are willing to interact and collaborate with each other, despite the competition element included and the potential reward for the submission with the highest potential. Hereby, it can be assumed that presence of social recognition might increase the effect of contribution recognition on the continuous intention to participate.

However, there are also contradictory perspectives regarding the interaction effect of both recognition levels. Ihl et al. (2012) argued that the presence of contribution recognition could decrease the effect of social recognition. The reason for this is that the presence of contribution recognition in ideation contests encourages intrinsic motivated participants to strive for a reward by outperforming other participants. This results in these participants showing less collective-oriented effort, which goes at the expense of community engagement. Moreover, Zhang et al. (2022) state in line that the presence of an extrinsic incentive as a monetary reward, negatively moderates the relationship between intrinsically motivated participants and there engagement. Thus, looking at these contradictory perspectives, the presence of contribution recognition might decrease the effect of social recognition on the continuous intention to participate in future ideation contests.

Hypothesis development

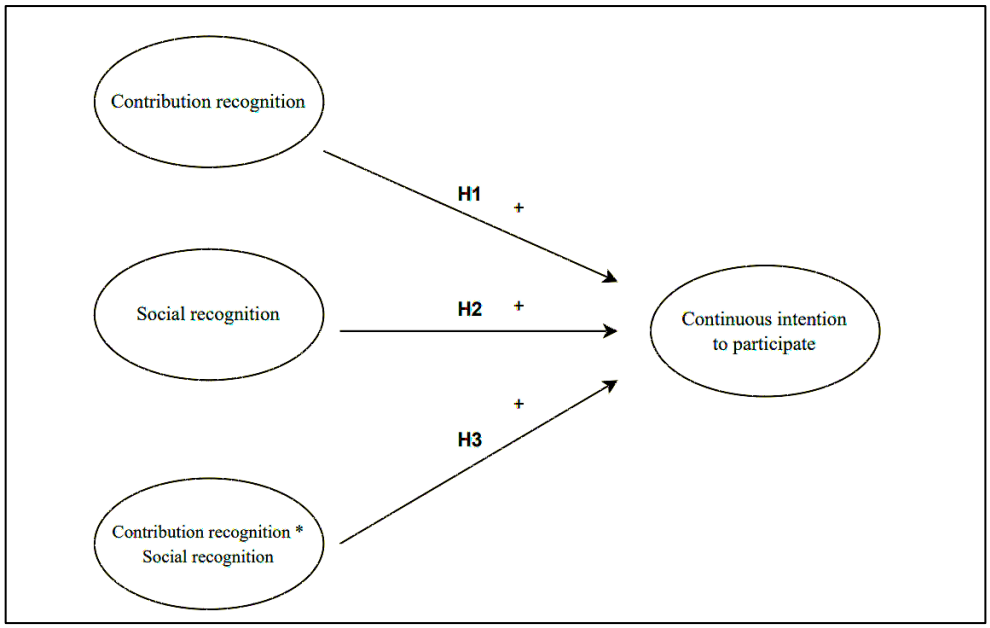
Overall, based on the discussed literature review above, the researcher expects that the interaction effect of contribution- and social recognition positively influences the continuous intention to participate in future ideation contests. First, it is stated that participants have various motives for their participation (Wang et al., 2020; Zhang et al., 2022), which facilitates the interaction between both recognitions and likely has a positive influence on the continuous intention to participate. Besides, this interaction can also be seen as "coopetition," were participants are willing to collaborate, despite the competitive element. This means that when social recognition is presence, it increase the effect of contribution recognition on the continuous intention to participate. Therefore the third hypothesis will be formulated as follows:

(H3) The interaction effect of contribution and social recognition positively influences the continuous intention to participate in future ideation contests.

2.5 Conceptual model

Figure 1 shows the conceptual model of this research, were the independent variables: contribution recognition, social recognition and both , have a positive influence on the dependent variable: the continuous intention to participate in future ideation contests.

Figure 1: conceptual model



3. Methodology

This chapter contains an explanation of the research method. First, the method will be discussed, followed by an explanation of the design. Afterward, the data collection will be explained, including the ethical considerations of this research.

3.1 Research method

To gain insights into the influence of the contribution and social recognition levels, on the continuous intention to participate in ideation contests, this research will adopt a quantitative approach. Sukamolson (2007) explained the quantitative approach as involving the numerical representation of observations to describe and explain the phenomena reflected by those observations.

To conduct quantitative research, an experimental design will be employed (Holton & Burnett, 2005). Using experimental research will allow for the testing of hypotheses under specific conditions based on a developed theory. In this research, the two recognition levels derived from the theory by Hanine and Steils (2019) will be applied. During an experiment, the researcher maintains control over the factors that influence the phenomena, and furthermore, a smaller group can be used to draw conclusions about larger groups (Holton & Burnett, 2005).

3.2 Research design

During this experiment, two independent variables are involved. These independent variables are referred to as treatment variables and must be non-metric, each with a defined number of categories (Hair et al., 2019). It is essential that the treatments are manipulated, as this allows the researcher to observe their influence on the outcome. The treatment variables in this research will be contribution and social recognition, with the categories of presence or absence.

In addition to these treatment variables, a control group needs to be included. The purpose of the control group is to demonstrate the experimental stimulus that causes the predicted effect on the outcome, while these effects are not present in the control group (Vennix, 2019). Because treatment variables are included within the experiment, the potential for an interaction effect is created (Hair et al., 2019). Identifying the significance of the interaction effect is a condition in experimental research, as it demonstrates that multiple factors interact and influence the outcome of the dependent variable. If an interaction effect is found, it indicates that one independent variable differs due to the presence or absence of another

independent variable. The design of the 2x2 experiment that will be used during this research, can be seen in Table 1 below.

Table 1: Design experiment

		Contribution recognition	
Social recognition		Absence	Presence
	Absence	Group 1 = Control group	Group 2 = Contribution
	Presence	Group 3 = Social	Group 4 = Contribution + Social

The approach of this experimental design is scenario-based, as it is applicable for hypothetical research (Kim & Jang, 2014). Scenario based experiments are applicable when the variable to measure entails cognitive evaluation. In this research, respondents will consider their intention to participate also in future ideation contests based on the assigned scenario, which includes the presence or absence of recognition levels.

When considering the stimulus material, it is important to establish a scenario that is comparable to the content of a practical ideation contest. This comparability is crucial for the generalizability of the results. The overall design for the ideation contests addressed in the scenarios is inspired by the conducted experiment by Acar (2018), where the context of the scenarios also focused on the food industry. In those scenarios, the challenge of the ideation contest involved the development of a new flavor idea. The provided requirements for an idea submission are also included in this research. These requirements are kept as simple as possible, which is supported by (Zhang et al., 2022), to ensure they are understandable for the respondents in this research. Additionaly, a timeframe of two months has been included in all the scenarios of this research.

To address the recognition levels in all three scenarios, the implementation of these concepts is supported by theoretical background. For the scenarios with the presence of contribution recognition, a monetary reward will be offered as a prize of 5,000 euros (Hanine & Steils, 2019) for the submission with the highest potential (Ihl et al., 2012; Terwiesch & Xu, 2008). The researcher assumed this to be a suitable prize for the context of the scenarios. However, it is also argued that the perceived attractiveness of the prize for participants can

differ (Acar, 2018; Jiang & Wang, 2020; Koh, 2019), which potentially results in variations in appeal. Furthermore, symbolic rewards will be provided for participants who do not win, as it is a part of the contribution recognition level derived from the solver valorization theory by Hanine and Steils (2019). Therefore, a free sample of the winning submission will be included, as symbolic rewards need to align with the participants' interests (Hanine & Steils, 2019).

For the scenarios that address the presence of social recognition, community activities representing community interaction will be included (Hanine & Steils, 2019). These activities involve the following elements: Firstly, participants can be a part of the organizations' community. Next, participants also have the opportunity to comment on and share each other's ideas. Finally, when a special committee has selected the ten best ideas, participants are able to vote for their favorite flavor, which determines the winner and represents active involvement in the participants' opinions. The scenarios that belong to each group, as presented in Table 2, can be seen in appendix A and B.

3.2.1 Between subjects and randomization

This experimental research will employ a between-subject design because each respondent will only experience one scenario: no treatment, contribution, social or contribution and social combined. Therefore, this type of design allows for determining causal estimates by comparing the response behavior of the participants in one experimental condition with those from another (Charness et al., 2012). Additionally, randomization will be implemented in this experiment. Harrison et al. (2009) argued that randomization within the treatment groups is fundamental in maintaining statistical control in the experimental design. The aim is to avoid selection bias, which could harm the internal validity of the research (Alferes, 2012).

3.2.2 Manipulation checks

In this experimental research, manipulation checks will be included with the aim of determining their effectiveness (Hoewe, 2017) by assessing whether the respondents understand and react as expected to the manipulation of an treatment variable, or the assigned scenario (Hauser et al., 2018). It is crucial that the participants react to an experimental scenario as intended by the researcher. Moreover, the robustness of the experiment is ensured, as it provides the researcher with certainty that the observed differences within the dependent variable are actually caused by the treatment variables.

To conduct the manipulation checks, a self-report approach will be used (Gruijters, 2022), which means that respondents will be asked, after being assigned to a scenario, to report their perception concerning the elements of the treatment variable. The respondents will answer the manipulation check using a 7-point Likert scale (ranging from '*very strongly disagree' – 'very strongly agree'*).

In this experiment, the two manipulation checks are included to represent the treatments. The first check related to the contribution recognition level is: *'I find the rewards awarded in this contest attractive'.* Here, respondents will need to answer how they perceive the contribution elements, including the monetary reward as a prize for the submission with the highest potential and the symbolic reward for participants who did not win. The second check related to the social recognition level is: '*I find the ability to vote for the best idea in this contest appealing'.* This represents an important element of this type of recognition: the active involvement of the participants' opinion in an ideation contest. For the fourth scenario, where the recognized levels are combined, both manipulation checks questions are included.

3.2.3 Attention checks

In addition to the manipulation checks, attention checks are also included. The goal is to identify any inattentive respondents during the data collection (Abby & Meloy, 2017) to ensure the validity, reliability and accuracy of the obtained data. Furthermore, participants are assigned to specific scenarios within this research, which necessitates their attention to make a valid contribution. The included attention checks are related to the elements an ideation contest scenario entail.

In the first scenario, belonging to the control group, the attention check is: '*Each entry was judged by one,'* with response options: '*panel of consumers'* or a '*special comité'*. For the second scenario, involving the contribution recognition level, the attention check is: '*The prize for the winning idea'* with response options: *'5000 euros' or '25000 euros'*. For the third scenario, which representing the social recognition level, '*the overall winner will be chosen by*' with response options: '*an independent panel*' or *'the participants'*. For the last scenario, both attention checks from contribution and social recognition scenarios will be included.

3.3 Sample

In this research, the population will be not focused on a specific target group because the aim of ideation contests also includes attracting a diverse pool of people (Hanine & Steils, 2019).

The population of this research will consist solely of individuals with Dutch nationality. This is because the experiment will only be shared with Dutch native speakers, as it provides a Dutch translation. Besides, no additional knowledge or prior experience in ideation contests is needed, as the content of the ideation contests in the scenarios is kept as simple as possible.

To draw conclusions about a larger population, a sampling technique can be used during the selection of respondents for this research. The sampling technique that will be employed is convenience sampling, a commonly used non-probability method that is both time- and cost efficient. This makes it applicable to this research, as it allows the researcher to select as many participants as possible from their personal network (Acharya et al., 2013). One disadvantage is that it could create selection bias, which means that the findings cannot be generalized to a specific group. Respondents for this study were recruited by sharing the online link through the researcher's social platforms and direct social network.

Regarding the required sample size for this research, Hair et al. (2019) argued that each group in this kind of research needs to consist of around 30 respondents. However, the researcher used the required sample size provided by the G-Power tool. This tool is used for computing statistical power analyses and determining sample sizes (Faul et al., 2009). After conducting this tool, it indicated a required sample size of 175, as shown in Appendix C. Consequently, each group in the experiment needs to contain at least 44 respondents.

In total, 205 valid respondents participated in this research. Notably, results concerning the social-demographic characteristics indicate that most participants have no experience with ideation contests (82,4%). Furthermore, respondents are primarily aged between 18 and 24 (44,2%) and a majority of respondents have a higher level of education (72,8%). Other socio-demographic characteristics are provided in table 2 below.

Table 2: Sample descriptives

Variable	*Category*	*Frequency*	*Percentage*
Experience	Yes	28	13,7%
	No	169	82,4%
	I don't know	8	3,9%
Gender	Male	114	55,3%
	Female	89	43,2%
Age	Younger than 18	7	3,4%
	18-24	91	44,2%

	25-34	48	23,3%
	35-49	10	4,9%
	50-65	42	20,4%
	Older than 65	6	2,9%
Monthly income before taxes	< 1000	53	25,7%
	1000 – 2000	33	16,0%
	2000 – 3000	40	19,4%
	3000 – 5000	51	24,8%
	5000 – 10000	11	5,3%
	> 10000	7	3,4%
	Prefer not to say	10	4,9%
Education	VMBO	3	1,5%
	MAVO	5	2,4%
	HAVO	16	7,8%
	VWO	9	4,4%
	MBO	16	7,8%
	HBO/Bachelor University	95	46,1%
	Master's Degree	55	26,7%
	Doctoral (PhD)	0	
	Other	3	3.5%
	Prefer not to say	3	3.5%

However, before the total of 205 valid respondents was determined, some adjustments needed to be made. Firstly, 272 respondents completed the experiment, but the researcher had to remove those who failed the attention check. For the first scenario, 23 respondents needed to be removed; for the second scenario, 6 respondents; for the third scenario, 22 respondents; and for the fourth scenario, 16 respondents. In total, 67 respondents needed to be removed from the sample, resulting in a total of 205 valid respondents. The distribution of the respondents across each scenario can be seen in table 3 below.

Table 3: Sample size scenarios

	***N* =**
Scenario 1 Control group	50
Scenario 2 Contribution recognition	64

Scenario 3 Social recognition	44
Scenario 4 Contribution- and social recognition	47

3.4 Data collection procedure

To address the hypotheses of this research, an online experiment has been established using the Qualtrics program. As previously noted, the experiment was only shared in Dutch; however, the English translation can be found in Appendix A. Before a respondent can complete their participation, several steps need to be followed. Once a respondent volunteers to participate by clicking on the provided link, they will guided through a series of steps.

First, they will face the introduction, which include a description of the researchers' background, followed by the research aim and context. Second, the participants will be presented with a scenario to which they have been randomly assigned. They will have unlimited time to read and understand this scenario. Third, after reading their assigned scenario, they need to complete an attention check and, subsequently, a manipulation check related to the scenario. Fourth, participants will be required to respond to three items concerning their continuous intention to participate, which will be explained in the following section. Lastly, they will be presented with a questionnaire consisting of 5 questions related to the control variables. After completing all these steps, the respondent's participation will be considered as complete.

3.5 Scale and measurement variable

To measure the attention and manipulation checks, as well as the dependent variable, a seven-point Likert scale will be used, ranging from '*very strongly disagree'* to '*very strongly agree'.* The Likert scale is applicable for understanding participants' perceptions of the attention and manipulation checks, as well as the dependent variable (Joshi et al., 2015). Furthermore, it allows for the quantification of research data, which is necessary for statistical analysis (Carifio & Perla, 2007).

The dependent variable measured in this experiment is the continuous intention to participate in future ideation contests. As noted in the introduction, the continuous intention will be used because it predicts participants' behavior and reflects their motives and decision making process regarding continuous intention to participate (Jain et al., 2017; Rehman et al., 2019). To ensure content validity, the operationalization of the dependent variable will be derived from a previous study. The aim of content validity is to "appropriately" sample the content domain (Lawsche, 1975), The items are derived from the study of Zheng et al. (2011),

were they investigated the influence of intrinsic and extrinsic motivation theory on participation intention. The translation of these items to the context of this research can be found in Table 4 below.

Table 4: Measurement dependent variable

Items Zheng et al. (2011)	Items used in this research
I intend to participate in this innovation contest	I think I will participate in similar idea contests of the same company in the future
I will try to participate in this innovation contest	I plan to participate in similar idea contests of the same company in the future
I am determined to participate in this innovation contest	I will definitely participate in similar idea contests from the same company in the future

3.6 Control variables

The control variables that will be used during this research are gender, age, income, education level, and experience in ideation contests. These variables will be included to ensure internal validity and the generalizability of the experiment by accounting for possible alternative explanations for the research findings (Wysocki et al., 2022).

Regarding socio-demographic variables such as gender, age, income and education, there is limited support in the literature demonstrating their influence on the continuous intention to participate. However, they represent characteristics of potential participants in ideation contests, which could provide interesting findings (Zheng et al., 2011). The gender control will be measured using a nominal scale, age and income using a ratio scale, and the education level of respondents using an ordinal scale. However, for the control variable of previous experience, its influence on continuous intention to participate have been supported in literature (Abhari et al., 2019; Zhang et al., 2022). This control variable will be measured using a dichotomous scale.

3.7 Data analysis

To perform statistical analysis on the collected data in this research, the program IMB SPSS Statistics will be used. In this experimental research, the two-way ANOVA method is appropriate, as there are two independent variables and one dependent variable. The aim is to examine the independent variables and determine whether they have a positive effect on the dependent variable.

Before conducting the ANOVA method, there are some assumptions that need to be checked to ensure the validity. These assumptions include the following: observations and errors must be independent, the sample size needs to be large enough, the variance need to be homogeneous and the dependent variable must be normally distributed (Hair et al., 2019).

3.8 Research ethics

Throughout this research, the researcher will maintain the ethical responsibility by the following. First, it is essential to ensure that respondents are not harmed. Therefore, it is crucial to explicitly state that participation is voluntary and that participants have the opportunity to withdraw from the experiment at any time. Second, as already noted by the data collection procedure, the researcher must be transparent about the experiment by clearly defining its aim and context (Newman et al., 2020). Maintaining this transparency aligns with the standards of the Netherlands Code of Conduct for Research Integrity (Universities of the Netherlands, 2018). Third, in the introduction, it is stated that participants could reach out to the researchers if they have uncertainties about the experiment. Fourth, to ensure participants comfort, they have the option to choose “prefer not to say” for questions related to gender and income. Lastly, the data will be processed anonymously and used in the researcher’s Master’s thesis and defense presentation.

4. Results

This chapter presents the results of this experimental research. First, the preparatory steps will be addressed, which includes the manipulation and reliability checks. After that, the descriptive statistics will be presented. Finally, the justification of the assumptions, followed by the results of the ANOVA analysis will be shown.

4.1 Preparatory steps

4.1.1 Manipulation check

The participants of the experimental groups in this research needed to answer the manipulation check question concerning the presence of the contribution and social recognition levels, separately or both. As previously noted, the aim of these checks is to determine whether the respondent experienced the manipulation as intended by the researcher (Hauser et al., 2018). This is crucial, because it ensures the robustness in drawing conclusions regarding the effect of the treatment variables on the continuous intention to participate.

To conduct the manipulation checks, the "self-report approach" has been used (Gruijters, 2022), which implies that the respondents are able to report their perception of the manipulation check. This is applied in this research, by using a 7-point Likert scale ranging from 'very strongly disagree' to 'very strongly agree'. The results of the manipulation checks for each scenario are presented in Table 5 below and Appendix C.

Table 5: Sample size scenarios

Scenario	*Manipulation*	*Mean*	*Std.dev*
(2) Contribution recognition	"Attractiveness rewards"	5.13	1.35
(3) Social recognition	" Appealing voting element"	5.41	1.11
(4) Contribution recognition & Social recognition	"Attractiveness rewards" "Appealing voting element"	5.00 4.81	1.50 1.48

Overall, it can be seen that the respondents answered the manipulation checks more than the centre of the 7-point Likert scale and can be considered as significant (Contribution, M = 5.13, SD = 1.35; Social, M = 5.41, SD = 1.11; Both, M = 5.00 & 4.81, SD = 1.50 & 1.48). It can be

assumed that the participants have understood and experienced the manipulation, as it contained specific elements of the contribution and social recognition level as intended by the researcher. Moreover, this ensures the robustness in drawing conclusions about the effect of the treatment variables, contribution and social recognition on the continuous intention to participate.

4.1.2 Reliability

To ensure the reliability of the scale for the dependent variable: *continuous intention to participate*, the internal consistency was determined by using Cronbach's alpha. The minimum recommended reliability threshold is 0.7 (Hair et al., 2019). The outcome of the reliability analysis of the Cronbach's alpha can be seen in Appendix C, and showed a level of *0.92*, which also not improved if any item were deleted. Looking at the noted threshold, it can be concluded that the scales are reliable and applicable in measuring the dependent variable.

4.2 Descriptive statistics

The descriptive statistics of the group means for each scenario concerning the continuous intention to participate, can be seen in Table 6 below and Appendix C. It can be seen that the scenario that provide the presence of social recognition, shows the highest mean compared to the others (Social, M = 4.27, SD = 1.36). Additionally, it can be observed that the other scenarios have almost an similar mean (No recognition, M = 3.58, SD = 1.27; Contribution, M = 3.62, SD = 1.39; Both, M = 3.65, SD = 1.25). Hereby, it seems that the scenario including the presence of social recognition, has the largest effect on the continuous intention to participate. Therefore, it needs to be analyzed whether the means of the treatments are statistically different.

Table 6: Descriptive group means

		N (205)	*Mean*	*Std..dev*
No contribution recognition	No social recognition	50	3.58	1.27
	Social recognition	64	4.27	1.36
Contribution recognition	No social recognition	44	3.62	1.39
	Social recognition	47	3.65	1.25

4.3 ANOVA

To analyze the findings of this research, a two-way ANOVA will be conducted to test the formulated hypotheses. This analyze method is appropriate because there are two independent variables (contribution and social recognition), and the dependent variable contains a metric scale, which is a requirement for performing a two-way ANOVA. The aim is to examine the independent variables, by seeing whether the presence or absence of the recognition levels, positively affects the continuous intention to participate. The aim is to investigate the influence of the independent variables on continuous intention to participate, specifically by examining whether the presence or absence of the recognition levels has a positive effect. For the two-way ANOVA analysis, the General Linear Model option in SPSS has been used, and the results can be seen in Table 9 and Appendix C.

4.4 Assumptions ANOVA

Before interpreting the results of the ANOVA analysis, some assumptions needed to be checked to ensure the validity and reliability. These include the independency of the observations, independency of errors, sample size, homogeneity of the variances and a normally distributed dependent variable (Hair et al., 2019). The SPSS output of these assumptions can be found in Appendix C.

4.4.1 Independency of the observations and errors

Firstly, the independency of observations is an crucial assumption to check. Hair et al. (2019) argued that failing this assumption could increase the Type 1 error rate, which implies the simplicity to find significant differences and rejecting the null hypothesis when it is actually true. Therefore, the responses of each group should be independent and uncorrelated. This research is conducted by using the program of Qualtrics, which ensured that respondents were randomly assigned to one of the experimental scenarios. Thus, it can be assumed that the respondents are independent of each other, which means that this assumption has been met.

Besides, to assess the independence of error terms, a probability plot has been established which can be seen in Appendix C. The plot shows that the points consistently follow the diagonal line, which indicates that the error terms are normal distributed. With this, it can be assumed that this assumption is met.

4.4.2 Sample size

Secondly, to ensure the statistical power, the sample size of the groups need to be sufficiently large. Hair et al. (2019) suggested a preferred sample size of 30 per scenario group. However, during this research, the sample size provided by the G-Power tool (Faul et al., 2009) has been taken into account. The tool showed a required sample of 175, meaning that each scenario group needs to contain at least 44 respondents. As shown in Table 6, each group has as many respondents as required follow the G-Power tool or even more, thus confirming that this assumption has been met.

4.4.3 Homogeneity of the variances

Third, to check whether the variance across the groups are equal, a Levene's test has been performed, which can be seen in Table 7 and Appendix C. This aim for checking this assumption is that it can affect the F-test (Hair et al., 2019). The outcome showed an significant result, $F(3,201) = 0.389$, $p = 0.761$, which indicates that the differences between groups are equal. Therefore, this assumption has been met.

Table 7: Levene's test

	Levene Statistic	*Df1*	*Df2*	*Sig.*
Continuous intention to participate	0.389	3	0.201	0.761

4.4.4 Normality

Finally, the population of the dependent variable, continuous intention to participate, needs to be normally distributed. Therefore, the skewness and kurtosis of the three items have been checked, to see if the they fell between the threshold 1.96 and -1.96 (Hair et al., 2019). As shown in table 8, all the items of the dependent variable are fulfilling this threshold, thus, it can be considered that the dependent variable is normally distributed.

Table 8: Normality check

	Item 1: I think I will participate	*Item 2: I plan to participate*	*Item 3: I will definitely participate*
Skewness	-0.373	-0.273	-0,023
Kurtosis	-0.427	-0.470	-0,511

Next, by performing a Shapiro-Wilk test, it can be checked how the dependent variable is distributed within the experimental groups. The outcome showed for contribution recognition a significant result ($W(64) = 0.959$, $P = 0.031$), which indicates a deviation in the distribution. However, looking at the skewness (-0.282) and kurtosis (-0.478) outcome, the scores fell between 1.96 and -1.96, which means a normal distribution. Besides, this group entails a sample size higher than the minimum of 30 (Hair et al., 2019), which allows to assume that the sample distribution is normal. On the other hand, the results for the other groups shows a non-significant value (Control, $W(50) = 0.967$, $P = 0.178$; Social, $W(44) = 0.965$, $P = 0.208$; Both, $W(47) = 0.953$, $P = 0.055$), and therefore showing a normal distribution.

Table 9: Shapiro-Wilk test

Group	*n*	*W statistic*	*df*	*p*	*Skewness*	*Kurtosis*
Control	50	0.967	50	0.178	-0.282	-0.478
Contribution recognition	64	0.959	64	0.031	-0.186	-0.667
Social recognition	44	0.965	44	0.208	-0.428	0.158
Contribution and social recognition	47	0.953	47	0.055	-0.514	-0.103

4.5 Results ANOVA

Since the assumptions are fulfilled, the two-way ANOVA could be conducted with a confidence level of 95%. The outcome is presented in Table 9 and Appendix C. First, it can be seen that the model is significant F (3,201) = 2.833, p = 0,039, allowing for the interpretation of the results. The effect strength of the model is 4.1% ($n2$=0.041), which is considered low in terms of explaining the variance in model (Hair et al., 2019).

Table 10: ANOVA analyse

ANOVA	*Type III Sum of Squares*	*df*	*Mean Square*	*F*	*Sig. (p)*	*Partial Eta Squared (n2)*	*Noncent. parameter*	*Observed power (b)*
Corrected model	14.808(a)	3	4.936	2.833	0.039	0.041	8.499	0.674
Intercept	2865,353	1	2865.353	1644.474	<.001	0.891	1644.474	1.000
Contribution	4.300	1	4.300	2.468	0.118	0.012	2.468	0.346
Social	5.377	1	6.437	3.694	0.056	0.018	3.694	0.481
Contribution * Social	5.377	1	5.377	3.086	0.080	0.015	3.086	0.416
Error	350.225	201	1.742					
Total	3252.222	205						
Corrected total	365.033	204						

(a) R squared = 0.041 (Adjusted R Squared = 0.026)

(b) Alpha = 0.05

Looking at the outcome of the ANOVA analysis, the formed hypotheses will be answered below. Important to note is that if a p-value falls between the range of 0.05 and 0.10, it will be indicated as marginally significant (Ollson-Colline et al., 2019). But first, according to Hair et al. (2019) it is crucial to identify the type of interaction before interpreting the results, as it impacts the conclusions that can be drawn concerning the effect of the independent variables on the outcome. The results presented in Table 9 showed that the interaction of contribution and social recognition is marginally significant (p = 0.080 > 0.05). The interaction effect is visible in Graphic 1 and illustrates an ordinal interaction, as the lines are not crossing over. However, Hair et al. (2019) argued that when a ordinal interaction is demonstrated, it is still possible to interpret the main effects.

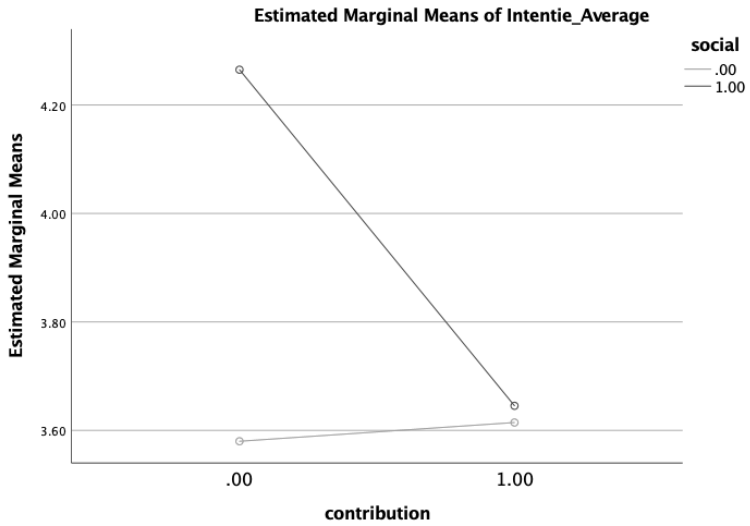
To address the **first hypothesis**, *the presence of contribution recognition positively influences the continuous intention to participate in future ideation contests*, the outcome showed in Table 9 with F (1,201) = 2.468, p = 0,118, that the influence of contribution recognition on the continuous intention to participate is not significant. Therefore, this hypothesis is not supported. Besides, the effect strength holds 1.2% ($n2$=0.012), which demonstrates a small effect on the continuous intention to participate.

To address the **second hypothesis**, *the presence of social recognition positively influences the continuous intention to participate in future ideation contests,* the outcome showed with F (1,201) = 3.694, p = 0.056, that the influence of social recognition on the continuous intention can be indicated as marginally significant. Therefore, this hypothesis is supported. Besides, the effect strength holds 1.8% (*n2*=0.018), which also demonstrates a small effect on the continuous intention to participate.

Finally, to address the **third hypothesis**, *the interaction effect of contribution and social recognition positively influences the continuous intention to participate in future ideation contests*, the outcome showed with F (1,201) = 3.086, p = 0.080 that the interaction effect of contribution- and social recognition on the continuous intention to participate can be indicated as marginally significant. Therefore, this hypothesis is supported. Besides, the effect strength holds 1.5% (*n2*=0.015), which demonstrates just as the other measured effects a small effect on the continuous intention to participate.

To specify, the interaction that can be seen in Graphic 1 below illustrates that the presence of contribution recognition leads to a decrease concerning the effect of social recognition on the continuous intention to participate, moving from *4.20* to *3.60*. Thus, the absence of contribution recognition, results in a higher effect of social recognition on the continuous intention to participate.

Graphic 1: Interaction effect



4.6 Additional analysis

Since control variables are included in this research, an ANCOVA analysis has been conducted to assess whether the control variables influence the dependent variable, aside from the treatment groups. Control variables, also named as covariates, need to be metrically scaled (Hair et al., 2019). Consequently, two control variables, previous experience, and gender, are excluded from the ANCOVA analysis.

When checking the assumptions, in Appendix C it is evident that the residuals are normally distributed. However, if we consider the provided sample size of 279 according to the G-power tool, the sample size of the groups seems insufficient for an ANCOVA analysis. Thus, this means a violation of the assumption. The Levene's test showed with $F(3,201) = 0.657$, $p = 0.580$, that the differences between the groups are equal.

Looking at the outcome of the ANCOVA which can be seen in Appendix C, the model seems to be not significant $F(6,108) = 1.724$, $p = 0.117$. Moreover, this is also visible in the effect of the control variables on the continuous intention to participate (Age, $F(1,198) = 0.727$, $p = 0.395$); Income, $F(1,198) = 0.114$, $p = 0.736$; Education, $F(1,198) = 0.052$, $p = 0.820$). None of the control variables seems to be significant. The explained variance of the ANCOVA model concerning the continuous intention to participate also decreased (0.21), compared to ANOVA model (0.26). As noted, the assumption of having a sample that is large enough was violated, which probably lead to an shortcoming in statistical power and subsequently influenced the insignificant results of the control variables.

5. Conclusion and Discussion

This chapter will conclude the research by summarizing the key findings regarding the research aims and questions and discussing the value and contribution thereof. Firstly, the research question will be addressed by implementing the results of this research. After that, the findings will be contextualized within the theoretical framework followed by the theoretical and practical implications thereof. The chapter finishes with the limitations of this research, alongside recommendations for future research.

5.1 Conclusion

This research aimed to examine the influence of contribution and social recognition from the solver valorization theory by Hanine and Steils (2019) with respect to the continuous intention to participate in future ideation contests by quantitative research. In doing so, a 2x2 experimental design was created to assess the social and recognition level. Scenarios regarding these levels were established in the context of the food industry. The main research question that this research intended to answer was: **Does the presence of contribution and social recognition positively affect the continuous intention to participate in future ideation contests?** Based on the analysis of the results in chapter 4, the results can be seen in table 6 below.

Table 6: Results

Hypothesis	*Result*
(H1) The presence of contribution recognition positively influences the continuous intention to participate in future ideation contests.	Rejected
(H2) The presence of social recognition positively influences the continuous intention to participate in future ideation contests.	Marginally accepted
(H3) The interaction effect of contribution and social recognition positively influences the continuous intention to participate in future ideation contests.	Marginally accepted

The results shows that firstly, the presence of contribution recognition in ideation contests does not positively affect the continuous intention to participate in future ideation contests. Therefore, it can be concluded that the following elements provided by the manipulation, monetary- and symbolically rewarding, are not proper recognitions for sustaining the continuous intention to participate in future ideation contests.

Secondly, the presence of social recognition in ideation contests does positively affect the continuous intention to participate in future ideation contests. Therefore, it can be concluded that the following elements provided by the manipulation, the opportunity to join the community, the ability to comment and share on each other's ideas and the voting element for personal favorite submissions, are proper recognitions for sustaining the continuous intention to participate in future ideation contests.

Thirdly, the combined effect of contribution- and social recognition has a positive influence on the continuous intention to participate in future ideation contests. The interaction showed that the presence of contribution recognition, leads to a decrease concerning the effect of social recognition on the continuous intention to participate. This could be explained as social recognition was much more close towards significance ($p = 0.056$), compared to contribution recognition ($p = 0.118$). Therefore, it can be concluded that in getting the highest influence on the continuous intention to participate, the elements provided by social recognition should be present in ideation contests, while the elements of contribution recognition should be absent.

5.2 Discussion

The first hypothesis of this research showed that the contribution recognition level of the solver valorization theory by Hanine and Steils (2019) does not positively affect the continuous intention to participate in future ideation contests. These results differ from the view that using particular monetary rewards as contribution recognition positively influences the continuous intention to participate in future ideation contests (Acar, 2018; Hofstetter et al., 2018; Piller et al., 2012).This form of recognition is often used during ideation contests as an incentive to deal with participants who are extrinsically motivated to get rewarded for delivering a higher performance than others.

However, there are some contradictory findings regarding the use contribution recognition that are in line with the result, particularly about the use of monetary rewards as demonstrated by the results of the first hypothesis. In fact, Salgado et al. (2020) argued that

monetary rewards linked with extrinsic motivated participants could even negatively influence the continuous intention to participate. This is supported by the idea that participants whose contribution is determined as the best solution or idea will achieve their goal by winning a prize, thereby fulfilling their needs. Therefore, they will participate for a short-term period and will not have the intention to participate in future ideation contests again, which differs from an organization's aspirations. A potential solution to overcome these unwanted effects of this type of recognition is to use a combination of monetary and non-monetary rewards (Rayna & Striukova, 2015). Furthermore, a finding that could explain the result, is that the perceived prize attractiveness for participants can differ (Acar, 2018; Jiang & Wang, 2020; Koh, 2019). Concerning a participants' background, the monetary reward could not be sufficiently high enough for someone, or there are also preferences for a multiple-prize award structure, were the prize money got divided among more participants, instead of the winner-takes-all basis.

The researcher assumed this to be a suitable prize for the context of the scenarios. However, it is also argued that the perceived attractiveness of the prize for participants can differ (Acar, 2018; Jiang & Wang, 2020; Koh, 2019), which potentially resulting in variations in appeal. Furthermore, there also symbolic rewards for participants who do not win, as it is a part of the contribution recognition level derived from the solver valorization theory by Hanine

The second hypothesis showed that the second level of the solver valorization theory, social recognition, positively affects the continuous intention to participate in future ideation contests. As it is marginally significant, it corresponds with the expectation of the researcher. As noted, social recognition can be used in the management practice of valuing the participants' contribution, also to ensure the relationships with the participants (Saha et al., 2020). In particular, creating a community around the ideation contests will positively influence the continuous intention to participate (Bretschneider et al., 2015; Steils and Hanine 2017). This is because it provides an opportunity of skill development by engaging with other participants with high expertise. Also, the interaction between participants creates a sense of belonging that gives them a feeling of connectivity to the community. The presence of social recognition contributes to the relationship between the organization and participant for a long-term period. This is especially important for organizations that intend to innovate structurally.

As the social recognition level contributes in maintaining the continuous intention, that subsequently leads to more quality and unforeseen solutions for the innovation development process, it also makes the implementation phase for the organization more easier. According to Steils and Hanine (2022), the amount of contributions could be reduced to a number that is manageable, as the ideation contest provides an opportunity that actively asks for the

participants' opinion by letting them vote on their favorite idea. Also, it could result in the idea with the highest potential, while it is already "socially approved" by participants of the community.

The third hypothesis showed that the interaction effect of contribution and social recognition positively influences the continuous intention to participate in future ideation contests. This results corresponds with the researcher' expectations. It is argued that that participants have various motives for their participation in ideation contests, which could explain the interaction effect of contribution and social recognition. However, the result also contradicts the expectations of the researcher. The interaction of both recognition levels showed that the presence of contribution recognition, lead to a decrease concerning the effect of social recognition on the continuous intention to participate. This corresponds with Ihl et al. (2012), as they argued that if ideation contests include monetary rewards as contribution recognition, intrinsic motivated participants will strive to outperform others, which goes at the expense of the community engagement. The finding of Zhang et al. (2022) could also explain this result, as they argued that the presence of monetary rewards negatively moderates the relationship between intrinsic motivated participants and their engagement.

5.3 Implications

5.3.1. Practical

The findings of this research provide some practical implications for managers who intend to organize an ideation contest, that can provide a source of creativity which allows innovation development for their organization (Kourtit & Nijkamp, 2012).

Firstly, the findings of this research show that, regarding the management practice of valuing the participants' contribution, social recognition can be suitable to maintain the continuous intention to participate in future ideation contests. Moreover, it ensures the effectiveness of the ideation contests, which results in high quality ideas and unforeseen solutions that are valuable for the innovation development process. Secondly, using social recognition will provide long-term relationships with participants which is, in addition to maintaining the effectiveness of the ideation contest, important for the ability to innovate structurally. This is particularly important for organizations that are active in dynamic markets and need to deal with conditions such as rapid changes in consumers preferences and needs in order to sustain competitive advantage.

Finally, looking at the way of implementing social recognition in ideation contests, managers should establish a community for the participants that enables them to connect and

have a sense of belonging. The following elements can be included, implemented in the scenarios of this research. Firstly, the design should include that anyone is able join the community of the ideation contests platform. Also, it should include the opportunity to interact by commenting on each other's contributions as this is an important factor to create a sense of community. Furthermore, it is crucial to pro-actively involve the opinion of the participants by offering them the possibility to vote on their favorite contribution. An additional benefit is that this ensures the effectiveness of the implementation phase, as the voting element is able to summarize the input to a manageable amount and reflects the approvement by potential customers.

5.3.2. Theoretical

The findings of this research also provide some theoretical contributions. Firstly, it contributes to the knowledge of the management practice of valuing the participants' contribution in ideation contests, as the contribution and social recognition level of the solver valorization theory by Hanine and Steils (2019) is examined by quantitative research. This knowledge is valuable as it emphasizes the need for careful management of the high expectations of participants, based on their active involvement and the sense of ownership of their contribution. Besides, it is highly important that organizations understand the suitable mechanisms of an ideation contest (Lin et al., 2021), and therefore the proper recognitions regarding the continuous intention to participate in future ideation contests.

The research contributes to the literature that emphasizes the influence of using contribution and social recognition in ideation contests on the continuous intention of participants (Segev, 2020; Kireyev, 2020; Hofstetter et al., 2018). This research showed that the presence of social recognition marginally influences the continuous intention, despite the presence of contribution recognition having no significant influence. Also, this research provided insights in how consumers perceive a certain design of an ideation contest which is important knowledge for the understanding of their perspective (Steils & Hanine, 2022).

5.4 Limitations and future research

This research has several limitations. First of all, some elements of this research influence its generalizability. The scenarios of this research have been established regarding the food industry, as that industry needs to deal with the conditions of a dynamic market caused by rapidly changing needs and preferences of consumers. These findings could be generalizable to similar industries such as retail and technology. However, the contribution- and social

recognition level could be perceived differently by participants of ideation contests, which focus on industries in static markets. As static markets are characterized by a slower pace of change, the timeframe for a certain challenge will probably be longer, and could also ask more from the participants in terms of deeper domain knowledge. Therefore, it might be that other proper recognitions can be used to value the participants' contribution, in order to maintain their continuous intention to participate in future ideation contests. An interesting starting point for future research could therefore be, to examine the solver valorization theory by Hanine and Steils (2019) in scenarios of ideation contests in which the focus lies on static markets or industries.

The sample size of this research is sufficient according to the used G-power tool. However, the positive results of this research showed only a marginal significance. Furthermore, the control variables included in this research, being age, education level and income, did not show any influence on the continuous intention to participate. The size of this sample is caused by the short period of time for data-collection and a certain amount of participants that needed to be removed as a consequence of the attention check. Therefore, future research should include a larger sample size, to enhance the statistical power (VanVoorhis & Morgan, 2007) and also to see if demographic variables have a certain influence on the continuous intention to participate.

In addition to the sample size, the sample of this research also entails some aspects that influence the generalizability. The respondents of this research only entail a Dutch nationality, as the researcher only shared the experiment with Dutch people. Respondents from other nationalities could respond differently to the scenarios of the experiment, as cultural differences could play a role. In general, the sample also consist of highly educated people, as 46,3% have a bachelor's degree from HBO or University, and 26,8% have a Master's degree. Also, looking at age, 44,4% are between the range 18 till 24 years old. This can be explained by the fact that the researcher mostly involved respondents from his direct social network.

A limitation of this research that negatively influences the research's' validity, is the absence of a manipulation check for the control group. The essential aspect of a manipulation check is that it ensures that respondents of the control group were not exposed to the manipulation of the treatment variables. Moreover, it is a manner to check whether the respondents experience certain elements of a scenario, as intended by the researcher (Hauser et al., 2018). Finally, a manipulation check for the control group gives the researcher certainty that the observed differences within the dependent variable, are actually caused by the treatment variables.

Looking for other directions for future research. The findings showed that the social recognition level seems to be a proper recognition to use within ideation contests to ensure the continuous intention to participate in future ideation contest. Including social recognition can be done by establishing a community. For future research it could be interesting to investigate whether different designs of a community show a distinction regarding the continuous intention to participate. Does a community need to contain elements as a platform on the organizations' website that allows interaction for participants, where they can observe and comment on the contributions of each other, and include a vote element that actively asks for the participants' opinion? Or does it need to have more "gamification features", which is suggested by Zhang et al. (2015)? This type of design has a different form of interaction, and entails that participants can be virtually rewarded by other participants for a level of skill.

Also, there can be a bit of doubtfulness around the research's translation to reality. First, this research measured the continuous intention to participate, instead of actual behavior of the willingness to participate in the future again. Besides, the respondents did not actually contribute an idea or solution, while this research is focused on post-participation of an ideation contest. For future research, it could be interesting to examine the solver valorization theory by Hanine and Steils (2019) of post-participation, by involving participants that have experience with ideation contests. An interesting opportunity, could be to do this by qualitative research, to get a more detailed overview around the decision making process regarding their continuous intention to participate and the presence of the contribution- and social recognition, separately or both. Moreover, it could also be valuable to use visualizations of a real design ideation contest, including the presence of social recognition. This also maintains the translation to reality for the participants, as they will face a more realistic setting than is provided in this research. Also, it is beneficial for the researcher to include visualizations, as it should be easier for participants to understand the research context (Qi et al., 2015) and therefore maintains the validity.

Finally, another direction for future research could be adding task enjoyment (Füller et al., 2011) as a moderator variable, to the current conceptual model. Füller et al. (2011) provided four constructs: autonomy, competence, task enjoyment and sense of community. As these constructs influence the experience of participants that subsequently can influence their continuous intention to participate, it could be interesting to see whether there are differences in outcome of task enjoyment, regarding the presence of different type of recognitions.

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Appendix

Appendix A Design experiment English

1.1 Introduction

Dear respondent,

Thank you in advance for your participation in this experiment. We are Anna, Bram, Daniël and Jesse, and we are conducting our Marketing thesis at Radboud University Nijmegen. This research is about ideation contests. In short, an ideation contest is a way for customers to submit new ideas and creations to a company that organizes the contest.

We would like to ask you to participate in this short experiment and answer a few questions about a contest regarding the creation of a new chips flavor. It is important to note that participating in this experiment is voluntary, and you can choose to withdraw at any time. Your responses will be anonymized and kept confidential.

Participation in this experiment will take about 3 minutes. Please answer each question sincerely. For this, there will be an attention check question included.

If you have any questions or comments about this experiment, please let us know and contact via bram.degroot@ru.nl.

By continuing with this experiment, you agree that your answers will be used for this research. Thank you in advance for your participation!

1.2 Scenario's

Scenario A: (group 1)

Please read the following scenario carefully to answer the questions.

You recently entered an idea contest to develop a new flavor for your favorite brand of potato chips! You used your imagination and creativity to come up with this new flavor. Your submission included the following three elements: the name, the ingredients of the flavor and the motivation why this flavor should win the contest. The results of the idea contest were announced after 2 months.
Each entry was judged by a special committee. The winner's idea was implemented in real life and sold in supermarkets.

Scenario B: (Contribution recognition / group 2)

Please read the following scenario carefully to answer the questions.

You recently entered an idea contest to develop a new flavor for your favorite brand of potato chips! You used your imagination and creativity to come up with this new flavor. Your submission included the following three elements: the name, the ingredients of the flavor and the motivation why this flavor should win the contest. The results of the idea contest were announced after 2 months.

Each entry was judged by a special committee. The winner's idea was implemented in real life and sold in supermarkets.

The winner of the contest received 5,000 euros. All other participants whose ideas were not chosen received a free sample of the winning product.

Scenario C: (Social recognition / group 3)

Please read the following scenario carefully to answer the questions.

You recently entered an idea contest to develop a new flavor for your favorite brand of potato chips! You used your imagination and creativity to come up with this new flavor. Your submission included the following three elements: the name, the ingredients of the flavor and the motivation why this flavor should win the contest. The results of the idea contest were announced after 2 months.

Each entry was judged by a special committee that selected the 10 best ideas submitted. Then the 10 best ideas were presented on a website, where you had the chance to vote for your favorite flavor to determine the winner. The winner's idea was implemented in real life and sold in supermarkets.

Participants in this contest could share their ideas with each other on the forum on the website, comment on each other and share their stories. You could be part of the community of your favorite chip brand.

Scenario D: (Contribution recognition + social recognition / group 4)

Please read the following scenario carefully to answer the questions.

You recently entered an idea contest to develop a new flavor for your favorite brand of potato chips! You used your imagination and creativity to come up with this new flavor. Your submission included the following three elements: the name, the ingredients of the flavor and the motivation why this flavor should win the contest. The results of the idea contest were announced after 2 months.

Each entry was judged by a special committee that selected the 10 best ideas submitted. Then the 10 best ideas were presented on a website, where you had the chance to vote for your favorite flavor to determine the winner. The winner's idea was implemented in real life and sold in supermarkets.
The winner of the contest received 5,000 euros. All other participants whose ideas were not chosen received a free sample of the winning product. Participants in this contest could share their ideas with each other on the forum on the website, comment on each other and share their stories. You could be part of the community of your favorite chip brand.

1.3 Attention check

Scenario A: (group 1)

Please answer the following question based on the preceding scenario. Each entry was judged by one:

1. Panel of consumers
2. Special comité

Scenario B: (Contribution recognition / group 2)

Please answer the following question based on the preceding scenario. The prize for the winning idea was:

1. 5000 euros
2. 25000 euros

Scenario C: (Social recognition / group 3)

Please answer the following question based on the preceding scenario. The overall winner will be chosen by:

1. An independent panel
2. The participants

Scenario D: (Contribution recognition + social recognition / group 4)

Please answer the following question based on the preceding scenario. The prize for the winning idea was:

1. 5000 euros
2. 25000 euros

Please answer the following question based on the preceding scenario. The overall winner will be chosen by:

1. An independent panel
2. The participants

1.4 Manipulation checks

Scenario B: (Contribution recognition / group 2)

Please rate the following proposition based on the preceding scenario: (1= very strongly disagree, 2= strongly disagree, 3= disagree, 4= neutral, 5= agree, 6= strongly agree, 7= very strongly agree)

I find the rewards awarded in this contest attractive

Scenario C: (Social recognition / group 3)

Please rate the following proposition based on the preceding scenario: (1= very strongly disagree, 2= strongly disagree, 3= disagree, 4= neutral, 5= agree, 6= strongly agree, 7= very strongly agree)

I find the ability to vote for the best idea in this contest appealing

Scenario D: (Contribution recognition + social recognition / group 4)

Please rate the following proposition based on the preceding scenario: (1= very strongly disagree, 2= strongly disagree, 3= disagree, 4= neutral, 5= agree, 6= strongly agree, 7= very strongly agree)

1. *I find the rewards awarded in this contest attractive*
2. *I find the ability to vote for the best idea in this contest appealing*

1.5 Measuring the dependent variable

Please rate the following statements based on the preceding scenario**:** (1= very strongly disagree, 2= strongly disagree, 3= disagree, 4= neutral, 5= agree, 6= strongly agree, 7= very strongly agree)

1. *I think I will participate in similar idea competitions of the same company in the future*
2. *I plan to participate in similar idea contests of the same company in the future*
3. *I will definitely participate in similar idea contests from the same company in the future*

1.6 Questionnaire control variables

Q1. I have participated in similar ideation contests before

1. Yes
2. No
3. I don't know

Q2. What is your gender?

a. Male
b. Female
c. Other
d. I prefer not to say

Q3. What is your age?

a. Younger than 18
b. 18 - 24
c. 25 - 34

d. 35 - 49
e. 50 - 65
f. Older than 65

Q4. What is your monthly income before taxes?
a. <€1000
b. €1000 - €2000
c. €2000 - €3000
d. €3000 - €5000
e. €5000 - €10000
f. >€10000
g. I don't know
h. I prefer not to say

Q5. What is your highest level of education?
a. Pre-vocational Secondary Education (VMBO)
b. Lower General Secondary Education (MAVO)
c. Senior General Secondary Education (HAVO)
d. Pre-University Education (VWO)
e. Secondary Vocational Education (MBO)
f. Bachelor's Degree (HBO/Bachelor Universiteit)
g. Master's Degree
h. Doctoral (PhD)
i. Other

Appendix B Design experiment Dutch

2.1 Introduction

Beste respondent,

Alvast bedankt voor deelname in dit experiment. Wij zijn Anna, Bram, Daniël en Jesse, en wij zijn Marketing studenten aan de Radboud Universiteit Nijmegen. Voor onze Masterscriptie doen wij een onderzoek naar een ideation contest (ideeënwedstrijd). Kort gezegd is een ideeënwedstrijd een manier voor klanten om nieuwe ideeën en creaties in te dienen bij een bedrijf dat de wedstrijd organiseert.

Wij zouden je willen verzoeken om deel te nemen aan een kort experiment, waarbij er een aantal vragen zullen worden gesteld over een voorbeeld wedstrijd.

Stel je voor dat je hebt deelgenomen aan een ideeënwedstrijd voor je favoriete chipsmerk. Het doel van de wedstrijd was het creëren van een nieuwe chipsmaak.

Jouw antwoorden zijn volledig anoniem, en de resultaten worden alleen gebruikt voor dit onderzoek. Deelname aan dit experiment duurt ongeveer 3 minuten.

Heb je vragen en/of opmerkingen, laat het ons weten!

Bram.degroot@ru.nl

Alvast bedankt voor je deelname aan dit experiment!

2.2 Scenario's

Scenario A: (Basic recognition / group 1)

Lees het volgende scenario aandachtig door om de vragen te kunnen beantwoorden.

U heeft recent meegedaan aan een ideeënwedstrijd om een nieuwe smaak te ontwikkelen voor uw favoriete merk chips! U heeft uw fantasie en creativiteit gebruikt om deze nieuwe smaak te bedenken. Uw inzending bevatte de volgende drie elementen: de naam, de ingrediënten van de smaak en de motivatie waarom deze smaak de wedstrijd zou moeten winnen.
De resultaten van de ideeënwedstrijd werden na 2 maanden bekendgemaakt. Elke inzending werd beoordeeld door een speciaal comité. Het idee van de winnaar werd in het echt uitgevoerd en verkocht in de supermarkten

Scenario B: (Contribution recognition / group 2)

Lees het volgende scenario aandachtig door om de vragen te kunnen beantwoorden.

U heeft recent meegedaan aan een ideeënwedstrijd om een nieuwe smaak te ontwikkelen voor uw favoriete merk chips! U heeft uw fantasie en creativiteit gebruikt om deze nieuwe smaak te bedenken. Uw inzending bevatte de volgende drie elementen: de naam, de ingrediënten van de smaak en de motivatie waarom deze smaak de wedstrijd zou moeten winnen.
De resultaten van de ideeënwedstrijd werden na 2 maanden bekendgemaakt. Elke inzending werd beoordeeld door een speciaal comité.
Het idee van de winnaar werd in het echt uitgevoerd en verkocht in de supermarkten.

De winnaar van de wedstrijd kreeg 5.000 euro. Alle andere deelnemers van wie de ideeën niet werden gekozen, kregen een gratis sample van het winnende product.

Scenario C: (Social recognition / group 3)

Lees het volgende scenario aandachtig door om de vragen te kunnen beantwoorden.

U heeft recent meegedaan aan een ideeënwedstrijd om een nieuwe smaak te ontwikkelen voor uw favoriete merk chips! U heeft uw fantasie en creativiteit gebruikt om deze nieuwe smaak te bedenken. Uw inzending bevatte de volgende drie elementen: de naam, de ingrediënten van de smaak en de motivatie waarom deze smaak de wedstrijd zou moeten winnen.
De resultaten van de ideeënwedstrijd werden na 2 maanden bekendgemaakt. Elke inzending werd beoordeeld door een speciaal comité dat de 10 beste ingezonden ideeën selecteerde. Vervolgens werden de 10 beste ideeën gepresenteerd op een website, waar u de kans kreeg te stemmen op uw favoriete smaak om de winnaar te bepalen. Het idee van de winnaar werd in het echt uitgevoerd en verkocht in de supermarkten.

Deelnemers in deze wedstrijd konden hun ideeën met elkaar delen op het forum op de website, commentaar geven op elkaar en hun verhalen delen. U kon deel uitmaken van de community van uw favoriete chipsmerk.

Scenario D: (Contribution recognition + social recognition / group 4)

Lees het volgende scenario aandachtig door om de vragen te kunnen beantwoorden.

U heeft recent meegedaan aan een ideeënwedstrijd om een nieuwe smaak te ontwikkelen voor uw favoriete merk chips! U heeft uw fantasie en creativiteit gebruikt om deze nieuwe smaak te bedenken. Uw inzending bevatte de volgende drie elementen: de naam, de ingrediënten van de smaak en de motivatie waarom deze smaak de wedstrijd zou moeten winnen.
De resultaten van de ideeënwedstrijd werden na 2 maanden bekendgemaakt. Elke inzending werd beoordeeld door een speciaal comité dat de 10 beste ingezonden ideeën selecteerde. Vervolgens werden de 10 beste ideeën gepresenteerd op een website, waar u de kans kreeg te stemmen op uw favoriete smaak om de winnaar te bepalen. Het idee van de winnaar werd in het echt uitgevoerd en verkocht in de supermarkten.

De winnaar van de wedstrijd kreeg 5.000 euro. Alle andere deelnemers van wie de ideeën niet werden gekozen, kregen een gratis sample van het winnende product. Deelnemers in deze wedstrijd konden hun ideeën met elkaar delen op het forum op de website, commentaar geven op elkaar en hun verhalen delen. U kon deel uitmaken van de community van uw favoriete chipsmerk.

2.3 Attention checks

Scenario A: (group 1)

Beantwoord alstublieft de volgende vraag, gebaseerd op het voorafgaande scenario. Elke inzending werd beoordeeld door een:

1. Panel van consumenten
2. Speciaal comité

Scenario B: (Contribution recognition / group 2)

Beantwoord alstublieft de volgende vraag, gebaseerd op het voorafgaande scenario. De prijs voor het winnende idee was:

1. 5.000 euro
2. 25.000 euro

Scenario C: (Social recognition / group 3)

Beantwoord alstublieft de volgende vraag, gebaseerd op het voorafgaande scenario. De uitendelijke winnaar wordt gekozen door:

1. De CEO van het bedrijf
2. De deelnemers

Scenario D: (Contribution recognition + social recognition / group 4)

Beantwoord alstublieft de volgende vraag, gebaseerd op het voorafgaande scenario. De prijs voor het winnende idee was:

1. 5.000 euro
2. 25.000 euro

Beantwoord alstublieft de volgende vraag, gebaseerd op het voorafgaande scenario. De uitendelijke winnaar wordt gekozen door:

1. De CEO van het bedrijf
2. De deelnemers

2.4 Manipulation checks

Scenario B: (Contribution recognition / group 2)

Beoordeelt u alstublieft de volgende stelling, gebaseerd op voorgaande scenario: (1= zeer zeer mee oneens, 2= zeer mee oneens, 3= mee oneens, 4= neutraal, 5= mee eens, 6= zeer mee eens, 7= zeer mee eens)

Ik vind de beloningen die worden uitgereikt in deze wedstrijd aantrekkelijk

Scenario C: (Social recognition / group 3)

Beoordeelt u alstublieft de volgende stelling, gebaseerd op voorgaande scenario: (1= zeer zeer mee oneens, 2= zeer mee oneens, 3= mee oneens, 4= neutraal, 5= mee eens, 6= zeer mee eens, 7= zeer mee eens)

Ik vind de mogelijkheid om te stemmen op het beste idee in deze wedstrijd aantrekkelijk

Scenario D: (Contribution recognition + social recognition / group 4)

Beoordeelt u alstublieft de volgende stellingen, gebaseerd op voorgaande scenario: (1= zeer zeer mee oneens, 2= zeer mee oneens, 3= mee oneens, 4= neutraal, 5= mee eens, 6= zeer mee eens, 7= zeer mee eens)

1. *Ik vind de beloningen die worden uitgereikt in deze wedstrijd aantrekkelijk*
2. *Ik vind de mogelijkheid om te stemmen op het beste idee in deze wedstrijd aantrekkelijk*

2.5 Measuring dependent variable

Beoordeelt u alstublieft de volgende stellingen, gebaseerd op voorgaande scenario: (1= zeer zeer mee oneens, 2= zeer mee oneens, 3= mee oneens, 4= neutraal, 5= mee eens, 6= zeer mee eens, 7= zeer mee eens)

1. *Ik denk dat ik in de toekomst deelneem aan soortgelijke ideeënwedstrijden van hetzelfde bedrijf*

2. *Ik ben van plan in de toekomst deel te nemen aan soortgelijke ideeënwedstrijden van hetzelfde bedrijf*
3. *Ik doe in de toekomst zeker mee aan soortgelijke ideeënwedstrijden van hetzelfde bedrijf.*

2.6 Questionnaire control variables

Q1: Ik heb ooit meegedaan aan een soortgelijke ideeënwedstrijd

a. Ja
b. Nee
c. Weet ik niet

Q2: Wat is uw geslacht?

a. Man
b. Vrouw
c. Anders
d. Wil ik liever niet zeggen

Q3: Wat is uw leeftijd?

a. Jonger dan 18
b. 18 - 24
c. 25 - 34
d. 35 - 49
e. 50 - 65
f. Ouder dan 65

Q4: Wat is uw bruto maandelijks inkomen?

a. <€1000
b. €1000 - €2000
c. €2000 - €3000
d. €3000 - €5000
e. €5000 - €10000
f. >€10000
g. Weet ik niet
h. Wil ik liever niet zeggen

Q5: Wat is uw hoogst behaalde opleidingsniveau?

a. VMBO
b. MAVO
c. HAVO
d. VWO
e. MBO
f. HBO/ Bachelor Universiteit
g. Master Universiteit
h. PhD
i. Anders

Appendix C Analysis results

Manipulation check

Statistics

		S2: Man Check_1	S3: Man Check_1	S4: Man Check_1	S4: Man Check_2
N	Valid	64	44	47	47
	Missing	141	161	158	158
Mean		5.13	5.41	5.00	4.81
Median		5.00	5.00	5.00	5.00
Mode		5	5	5	5
Std. Deviation		1.351	1.106	1.504	1.484
Sum		328	238	235	226

Reliability analysis: (DV) *Continuous intention to participate:*

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.925	.926	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Onafhankelijk_1	7.22	7.300	.845	.750	.895
Onafhankelijk_2	7.49	7.290	.895	.807	.854
Onafhankelijk_3	7.81	7.684	.805	.664	.926

Descriptive: Experience

Ervaring

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Ja	28	13.6	13.7	13.7
	Nee	169	82.0	82.4	96.1
	Weet ik niet	8	3.9	3.9	100.0
	Total	205	99.5	100.0	
Missing	System	1	.5		
Total		206	100.0		

Descriptive: Gender

Geslacht

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Man	114	55.3	55.6	55.6
	Vrouw	89	43.2	43.4	99.0
	Zeg ik liever niet	2	1.0	1.0	100.0
	Total	205	99.5	100.0	
Missing	System	1	.5		
Total		206	100.0		

Descriptive: Age

Leeftijd

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Jonger dan 18	7	3.4	3.4	3.4
	18 – 24	91	44.2	44.4	47.8
	25 – 34	48	23.3	23.4	71.2
	35 – 49	10	4.9	4.9	76.1
	50 – 65	42	20.4	20.5	96.6
	Ouder dan 65	6	2.9	2.9	99.5
	7	1	.5	.5	100.0
	Total	205	99.5	100.0	
Missing	System	1	.5		
Total		206	100.0		

Descriptive: Income

Inkomen

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<1000	53	25.7	25.9	25.9
	1000 – 2000	33	16.0	16.1	42.0
	2000 – 3000	40	19.4	19.5	61.5
	3000 – 5000	51	24.8	24.9	86.3
	5000 – 10000	11	5.3	5.4	91.7
	>10000	7	3.4	3.4	95.1
	Weet ik niet	10	4.9	4.9	100.0
	Total	205	99.5	100.0	
Missing	System	1	.5		
Total		206	100.0		

Descriptive: Education

Opleiding

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	VMBO	3	1.5	1.5	1.5
	MAVO	5	2.4	2.4	3.9
	HAVO	16	7.8	7.8	11.7
	VWO	9	4.4	4.4	16.1
	MBO	16	7.8	7.8	23.9
	HBO/Bachelor Universiteit	95	46.1	46.3	70.2
	Master Universiteit	55	26.7	26.8	97.1
	Anders	3	1.5	1.5	98.5
	Ik zeg dat liever niet	3	1.5	1.5	100.0
	Total	205	99.5	100.0	
Missing	System	1	.5		
Total		206	100.0		

Descriptive statistics

Descriptives

Intentie_Average

		N	Mean	Std. Deviation	Std. Error	90% Confidence Interval for Mean		Minimum	Maximum	Between-Component Variance
						Lower Bound	Upper Bound			
1.00		50	3.5800	1.27030	.17965	3.2788	3.8812	1.00	6.33	
2.00		64	3.6146	1.35981	.16998	3.3308	3.8983	1.00	6.00	
3.00		44	4.2652	1.38762	.20919	3.9135	4.6168	1.00	7.00	
4.00		47	3.6454	1.24994	.18232	3.3393	3.9514	1.00	6.00	
Total		205	3.7528	1.33768	.09343	3.5985	3.9072	1.00	7.00	
Model	Fixed Effects			1.32000	.09219	3.6005	3.9052			
	Random Effects				.15667	3.3841	4.1215			.06278

Normality check: ANOVA

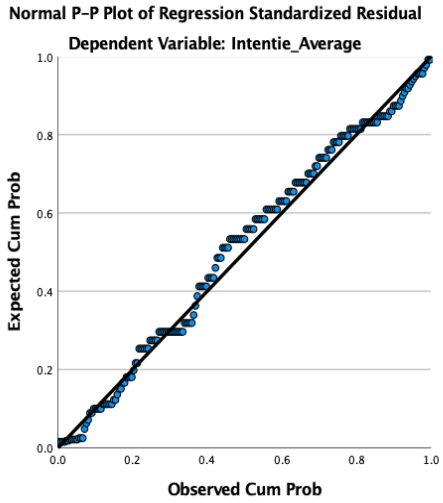
Statistics

		Onafhankelijk_1	Onafhankelijk_2	Onafhankelijk_3
N	Valid	205	205	205
	Missing	1	1	1
Mean		4.04	3.77	3.45
Median		4.00	4.00	3.00
Mode		5	4	3
Std. Deviation		1.461	1.411	1.429
Variance		2.136	1.991	2.043
Skewness		-.373	-.273	-.023
Std. Error of Skewness		.170	.170	.170
Kurtosis		-.427	-.430	-.511
Std. Error of Kurtosis		.338	.338	.338
Range		6	6	6
Minimum		1	1	1
Maximum		7	7	7
Sum		828	773	707

Shapiro-Wilk test

Group	*n*	*W statistic*	*df*	*p*	*Skewness*	*Kurtosis*
Control	50	0.967	50	0.178	-0.282	-0.478
Contribution recognition	64	0.959	64	0.031	-0.186	-0.667
Social recognition	44	0.965	44	0.208	-0.428	0.158
Contribution and social recognition	47	0.953	47	0.055	-0.514	-0.103

Independence of errors



Levene's test: ANOVA

Levene's Test of Equality of Error Variances[a,b]

		Levene Statistic	df1	df2	Sig.
Intentie_Average	Based on Mean	.389	3	201	.761
	Based on Median	.445	3	201	.721
	Based on Median and with adjusted df	.445	3	194.878	.721
	Based on trimmed mean	.403	3	201	.751

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Dependent variable: Intentie_Average

b. Design: Intercept + contribution + social + contribution * social

ANOVA test

Tests of Between-Subjects Effects

Dependent Variable: Intentie_Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	14.808[a]	3	4.936	2.833	.039	.041	8.499	.674
Intercept	2865.353	1	2865.353	1644.474	<.001	.891	1644.474	1.000
contribution	4.300	1	4.300	2.468	.118	.012	2.468	.346
social	6.437	1	6.437	3.694	.056	.018	3.694	.481
contribution * social	5.377	1	5.377	3.086	.080	.015	3.086	.416
Error	350.225	201	1.742					
Total	3252.222	205						
Corrected Total	365.033	204						

a. R Squared = .041 (Adjusted R Squared = .026)

b. Computed using alpha = .05

Levene's test ANCOVA

Levene's Test of Equality of Error Variances[a]

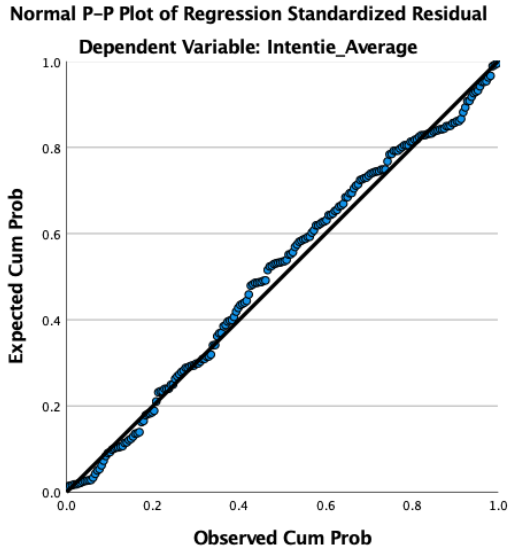
Dependent Variable: Intentie_Average

F	df1	df2	Sig.
.657	3	201	.580

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Leeftijd + Inkomen + Opleiding + contribution + social + contribution * social

Independence of errors



ANCOVA test

Tests of Between-Subjects Effects

Dependent Variable: Intentie_Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corrected Model	18.122[a]	6	3.020	1.724	.117	.050	10.343	.645
Intercept	175.920	1	175.920	100.407	<.001	.336	100.407	1.000
Leeftijd	1.275	1	1.275	.727	.395	.004	.727	.136
Inkomen	.199	1	.199	.114	.736	.001	.114	.063
Opleiding	.091	1	.091	.052	.820	.000	.052	.056
contribution	3.854	1	3.854	2.199	.140	.011	2.199	.314
social	7.072	1	7.072	4.036	.046	.020	4.036	.516
contribution * social	5.054	1	5.054	2.884	.091	.014	2.884	.394
Error	346.911	198	1.752					
Total	3252.222	205						
Corrected Total	365.033	204						

a. R Squared = .050 (Adjusted R Squared = .021)

b. Computed using alpha = .05