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How Manipulating Incentives and Participation in Green Programs Affect Satisfaction: The Mediating Role of Warm Glow

Abstract

Sustainable consumption and green marketing are receiving considerable attention. Nevertheless, the focus of past studies has always been on customer participation, with less attention given to how to satisfy those customers. Also, the focus has been on participants in green programs and not those who choose not to participate. The use of incentives to encourage voluntary green program participation is quite uncommon. The purpose of this research is to examine how manipulating the different types and levels of incentives affect the relationship between voluntary green program participation and satisfaction through the mediating role of warm glow. Three experimental studies were carried out, and data were tested and analyzed using SPSS and PROCESS macro. Results show that the best option to be used by managers to satisfy participants and non-participants of green programs when incentivizing participation is the high self-benefiting incentive. Yet, if this is not feasible, then the second-best option is not to incentivize participation.

Keywords: *green marketing, warm glow, green programs, social norms, services marketing, sustainability.*

1. Introduction

Sustainable consumption behavior refers to incorporating sustainability issues into consumer decision-making. Sustainability and green marketing are currently receiving paramount interest

in academia and public policy (Donmez-Turan, and Kiliclar, 2021; Jung et al., 2020; Kumar and Yadav, 2021). For a long time, businesses' strategies and policies assumed that natural resources are infinite; hence environmental impact was not much considered. Nowadays, such assumption is no longer valid. Natural resources are finite, and without environmental care and change in businesses and customers' current pattern of behavior, high costs would be incurred (Dangelico and Vocalelli, 2017; Groening et al., 2018; Kotler, 2011; Rex and Baumann, 2007). The result would not only be scarcity in resources, but huge negative side effects will occur such as climate change, depletion in the ozone layer, increased air and water pollution, increased diseases and health problems, and much more (Melissen et al., 2015). As a result, many companies are now reexamining their sustainability policies (Kotler, 2011; Wang, 2017).

Not all businesses recognize the benefits sought from sustainability development. Some view it as an add-on to their work yet important to be performed due to external pressure. This sustainability picture needs to be reframed. First, sustainable development should be viewed as an opportunity for value creation (Melissen et al., 2015) rather than an extra burden imposed on businesses. Second, sustainable activities can increase profitability and competitive advantage creation for the business (Kiron et al., 2012). Third, consumers now are paying close attention to social, moral, and ethical considerations, and their choices no longer reflect the mere preference of price and quality (Mies and Gold, 2021; Shazly and Mahrous, 2020). This increased consumer social responsibility concern has led to the expansion of environmentally friendly products (Hunt and Dorfman, 2009; Marzouk and Mahrous, 2020).

Even though green marketing and sustainability have been of great interest to marketers recently past studies have focused on customers' participation rather than their satisfaction (Giebelhausen et al., 2016; Torrijos et al., 2021). Yet, satisfaction is a very important variable for any marketing manager, especially when deciding to adopt sustainability initiatives or not.

Also, the use of incentives to encourage voluntary green program participation is quite an uncommon practice by marketers (Amrutha and Geetha, 2021). Additionally, previous studies about green marketing have always focused on the people choosing to participate in green programs and not on those choosing not to participate. However, both groups are considered customers, and satisfying both of them should be the aim of any manager. Besides, no research has examined how the different levels of the different types of incentives moderate the individual response to green programs (Giebelhausen et al., 2016). Accordingly, this research studies how the customer voluntary green programs' participation and incentivizing such participation affect satisfaction. Specifically, this research examines how manipulating the type (self-benefiting incentives and other-benefiting incentives) and level (low, high) of incentive can affect the relationship between voluntary green program participation and warm glow. It also examines how warm glow mediates the relationship between participation in voluntary green programs and satisfaction. Three true experimental studies are used to examine how participation in voluntary green programs positively affects warm glow and service satisfaction. Hayes PROCESS macro is used to assess the statistical significance of the indirect and direct effects in the three studies and the moderated mediation effects in studies two and three.

The paper is organized as follows; section two reviews the literature on green program participation, warm glow, customer satisfaction, and incentives to develop the research hypotheses. Section three discusses the three sequential experimental studies; it discusses the design, participants, procedures and measurement of each experiment study. Section four presents the results and discussion of each experimental study. Finally, section five shows the conclusion, research implications, limitations, and future research directions.

2. Literature Review and Hypotheses Development

2.1. Voluntary Green Programs

Green marketing refers to an organization's efforts to design, promote, price and distribute products that will not harm the environment (Nandini and Deshpande, 2011). Examples of green marketing include environmentally safer products, recyclable packaging, energy-efficient operations, phosphate-free detergents, and fewer plastic bottles.

A voluntary green program is "an initiative that 1) has a stated goal of improving the natural environment, and 2) utilizes the voluntary efforts of the sponsoring organization's customers" (Giebelhausen et al., 2016, p. 56). Some examples include restaurant recycling programs, conserving electricity programs, hotel linen and towel reuse programs, and programs that encourage shoppers to come with their bags to retail outlets (Karmarkar and Bollinger, 2015; Sukhu et al., 2019). Even though these programs have been widely present lately, little research investigates how they impact customers' experience. There are even now some innovative companies looking for uncommon new types of voluntary green programs. For example, Starwood brand hotels introduced an optional "Make a Green Choice" program that rewards guests when performing green behaviors (Liu and Mattila, 2016). It is also important to note that eco-efficiency used by companies should not deter their customers' experiences as they may not accept less comfort, luxury, or reduced service levels for the sake of eco-efficiency measures. For example, some hotels started to use water-efficient showerheads to decrease their water usage rate. Yet, their customers were not happy with such change, which caused hotels to reinstall the showerheads to permit a more firm water supply for the customers (Melissen et al., 2015).

It is expected that green programs will increase over time. Such programs often help increase the profitability of the sponsoring organization and show evidence of corporate concern toward the society (Kiron et al., 2012). Companies are acting on the proposition that green programs are not just the "right thing to do" but also "the smart thing to do" (Smith, 2003, p.52).

Green program participation is considered prosocial behavior (Welsch, et al., 2021). Prosocial behavior means "contributing to the public good or worthy cause, engaging in friendly action, refraining from imposing negative externalities on others" (Benabou and Tirole, 2006, p.1656). Social norms are defined as "rules (either explicit or implicit) that a group uses to define desirable and undesirable behavior" (Giebelhausen et al., 2016, p. 57). There are two types of norms: descriptive norms and injunctive norms. Descriptive norms specify what is done, while injunctive norms specify what should be done (Cialdini et al., 1990). People tend to act following the social norms of society.

An injunctive norm is expected to encourage people to participate in voluntary green programs (e.g., conserving water and electricity, recycling trash, or reusing a towel). Participation in such programs is viewed as prosocial, moral, and desirable (Giebelhausen et al., 2016). Moreover, it attaches honor to its participant and shame to its non-participant (Batson 1998; Freeman 1997). Social norms are usually studied in behavioral contexts related to environmentalism (Cialdini et al., 1990; Goldstein et al., 2008; Mazar and Zhong, 2010). However, people's attitudes toward the environment might not often be translated into eco-friendly behavior (Kotler, 2011).

Yet, despite the degree to which people act in reality in a sustainable way (i.e., descriptive norm), doing so is always viewed as a good behavior (i.e., injunctive norm).

2.2. Warm Glow

According to the classical prosocial behavior theory, pure altruism encourages people to contribute to the common good (e.g., Bergstrom et al., 1986). Altruism has always been conceptualized in literature as a personal value structure that affects behavior significantly (Schwartz and Bilsky, 1987; Stern et al., 1995). Nevertheless, research on analyzing the benefits of contributing to public goods shows that altruism does not completely explain prosocial

behavior (Andreoni, 1989, 1990). A direct, personal utility is experienced by people when contributing to public goods apart from any increase in the common good. This is what Andreoni calls warm glow." Regarding environmentally responsible behavior choices, people experience arm glow due to the moral satisfaction induced by contributing to the common good of the environment (Bhattacharya et al., 2020; Nunes and Schokkaert, 2003). This conceptualization is supported by studies proposing that some people buy green energy at a premium price to feel better about themselves rather than caring about the impact exerted on the environment (Wüstenhagen and Bilharz, 2006).

In the last decades, models of prosocial behavior started to move from the classical approach based on pure altruism to warm glow (Wilhelm et al., 2017). It is argued that besides altruism, other factors can motivate prosocial behavior (e.g., making donations and supporting the environment). People can be motivated by "a desire to win prestige, respect, friendship, and other social and psychological objectives" (Olson, 1965, p.60). People sometimes participate in prosocial behavior to avoid the scorn of others or to receive social acclaim (Becker, 1974). Social image concerns and willingness for acclaim are important (Olson, 1965). According to Andreoni 1990, guilt and a desire for "warm glow" play an important role in prosocial behavior. A warm glow feeling is considered impure altruism (Winterich and Barone, 2011) that increases when helping a philanthropic or charitable cause (Andrews et al., 2014).

In the psychology literature, the "negative state relief model" is similar to warm glow but in a way that people participate in charitable behavior and help others avoid experiencing negative emotions (Baumann et al., 1981; Spielmann, 2020). This is what Andreoni (1995, p. 1) proposes as the "cold-prickle of doing something bad." When people choose not to participate in a good deed, a negative emotion will result. Dahl et al. (2005) referred to this negative emotion as "inaction guilt." This guilt is a negative emotion experienced due to personal or social standards

(Tangney et al., 1996). Pelozo et al. (2013) found that people prefer to purchase products promoted through ethical appeals. A want drives this preference to avoid anticipated guilt. The perception that the flip side of warm glow is guilt makes sense. According to Bowles and Gintis (2006), guilt and shame are the emotions that encourage people to stick to social norms (e.g., participating in green programs). Warm glow and relief of guilty feelings are behaviorally similar (Evren and Minardi, 2017). Helping is considered a way of relieving the negative mood of individuals. The warm glow is a self-gratification way in adults (Baumann et al., 1981).

2.3. Service Satisfaction

Satisfaction is an overall evaluation based on the customer's purchase and consumption experience with a good or service (Anderson et al., 2004). It results from a subjective comparison between initial expectations of the product or service and a posteriori perception of its performance (Robinot and Giannelloni, 2010). Satisfaction is complex as it involves cognitive and affective (emotional) mechanisms (Oliver, 2010). Research in altruistic, moral, and giving behavior in which self-interests are not the main goal dominating decision making; is explained better with affective models (Erevelles, 1998).

Warm glow occurring from participating in voluntary green programs is a positive emotion; as a result, it should have a positive effect on satisfaction (Erevelles, 1998; Perić-Prkosovački et al., 2021). Warm glow is a sense of moral satisfaction by voluntary participation in providing a public good (Kahneman and Knetsch, 1992). Harbaugh (1998) describes warm glow as a purely internal satisfaction that results in the act of giving. Charity donations induce neural activity in areas connected to reward processing (Harbaugh et al., 2007). Based on the previous discussion, we propose that the positive emotion and content caused by green program participation positively affect the satisfaction judgment of the service experience. Likewise, negative emotions caused by non-participating in the green program will negatively affect the satisfaction judgment

with the overall service experience. Thus, we hypothesize:

***H1:** There is a positive relationship between green program participation and warm glow.*

***H2:** There is a positive relationship between warm glow and service satisfaction.*

***H3:** The warm glow mediates the relationship between green program participation and service satisfaction.*

2.4. Brand Incentives

Incentives are rewards given in exchange for participating in voluntary green programs (Giebelhausen et al., 2016). Using incentives (extrinsic motivation) can "crowd out" the intrinsic motivation of people's willingness to behave prosocially leading to fewer people participating in a prosocial activity (Hossain and Li, 2014; Pelozo et al., 2013). People are influenced by two types of motivation; extrinsic and intrinsic. Extrinsic motivation is activated from the outside, while intrinsic motivation is activated from the inside. Intrinsic motivation is related to activities individuals do because they like to do them or feel satisfaction from doing what ought to be done (Frey and Oberholzer-Gee, 1997). Social psychologists have argued that there are "hidden costs of rewards" (Lepper and Greene, 1978) and that rewards may reduce intrinsic motivation (Frey and Oberholzer-Gee, 1997). For example, if an individual acquires intrinsic benefits from behaving altruistically or from having a sense of civic duty, compensation will partially destroy his intrinsic motivation and altruistic feelings (Frey, 1994). Civic-minded people aren't just living for themselves and achieving their personal goals, but they are willing to bear some costs for the benefit of the larger group (Frey and Oberholzer-Gee, 1997).

When people are motivated by extrinsic incentives rather than by the ability to indulge in altruistic feelings, psychologists refer to this as "an over-justification effect" that can lead to a partial or total net crowding out of prosocial behavior by the unnecessary high extrinsic incentives (Lepper et al., 1973). Rewards act as "an increase in the noise-to-signal ratio or even reverse the sign of the signal" (Benabou and Tirole, 2006, p. 1645). Similarly, in cause-related marketing (CRM) campaigns, when companies offer incentives, the purchase intention of people

decreases due to the decrease in warm glow associated with the purchase (Andrews et al., 2014). In other words, people start to view that their CRM purchases are no longer about contributing to a good cause but about taking advantage of the incentives. Those incentives deprive people of their warm glow good feelings experienced from contributing to a good cause.

There are two effective types of incentives: the normal direct price effect and the indirect psychological effect. The former is the one that sometimes leads to making the incentivized behavior more attractive. In contrast, the latter is the one that, in some cases, works in the opposite direction to the price effect and crowds out the incentivized behavior (Gneezy et al., 2011). In monetary market situations, the price effect guides behavior while in social situations, in social situations, altruistic motives and social norms guide behavior (Kerr et al., 2012). Regarding the incentive levels, what forms a small or a large incentive depends on the case. It is clear, as Gneezy and Rustichini's (2000a) title suggests, "Pay enough-or, don't pay at all." The principle that the more-is-better does not work when incentives are very small. Small incentives often backfire despite the belief that they should make consumers more satisfied than no incentive (Liu et al., 2015). In incentivizing prosocial behavior and charitable giving, this effect weakens the value of prosocial behavior, especially in public contexts (Ariely et al., 2009). It has been shown that offering some incentive is not always better than no incentive. However, people respond positively to the increases in the size of the incentive when incentives are high (Gneezy et al., 2011).

Regarding people choosing not to participate in green programs, it seems that rewards (i.e., incentives) make free riders (non-participants) avoid the "cold prickle" of doing something bad, as described by Andreoni (1995). To put it differently, when incentives exist, free riders (non-participants) are punished less harshly, consequently increasing their coming participation by less. Moreover, rewards and incentives reduce their shame and guilt (Fuster and Meier, 2010).

To sum up, it is rational to assume that offering small incentives in a voluntary green program will decrease warm glow and satisfaction among participants while increasing warm glow (i.e., decrease the cold-prickle) and satisfaction among non-participants. Also, it is rational to assume that offering large incentives in a voluntary green program will have the opposite effect of the small incentives among participants. In contrast, the same effect to that of the small incentives among non-participants, yet the effect is expected to be stronger.

Not all incentives are the same. Recently, researchers have started to investigate how prosocial incentives might lead to different results. There are two types of incentives; "self-benefiting" incentives and "other-benefiting" incentives (Imas, 2014). A self-benefiting incentive is a reward that directly grants utility to the green program participant—for example, cash discounts, merchandise, or loyalty program points.

On the other hand, the other-benefiting incentive is a reward that does not directly grant utility to the green program participant. In other words, it is a reward spent on others rather than on oneself. Anik et al. (2013) realize that charitable donations and spending on co-workers result in happier, more satisfied employees and better employee performance. The desire to help other people is a need that is originally found in human nature (Weinstein and Ryan, 2010), so giving to others leads to increased happiness and satisfaction (Andreoni, 1990; Dunn et al., 2008). People are happier when they spend on others rather than themselves (Dunn et al., 2008; Imas, 2014). Firms often offer small benefits to customers to thank them for their loyalty and support (e.g., Lyon, 2012). Such firms believe that offering these benefits will make customers feel more appreciated which is important to relational satisfaction (Drozdenko et al., 2011) and commitment (e.g., Hoffman and Lowitt, 2008). Yet, a small benefit given to customers that do not meet their expectations will make them feel less appreciated compared to when such a small benefit is given to charity on their behalf (Liu et al., 2015).

Direct incentives might not always be the best option to motivate them. Evidence supports this belief, especially when incentive levels are low (Gneezy et al., 2011). The happiness resulting from giving benefits to others may be more than that resulting from equivalent direct benefit to oneself (Dunn et al., 2008; Imas, 2014). Indeed, people are happier when provided with prosocial incentives rather than the standard self-benefiting incentives, but only in the case of low incentives. Yet, this difference vanishes or reverses when high incentives are used (Imas, 2014). Regarding the levels of other-benefiting incentives and how such differences affect warm glow and satisfaction, people participating in prosocial activities are usually insensitive to the prosocial incentive (Imas 2014). People are insensitive to the benefits others receive for donations made and do not pay attention when assessing the amount of the benefit (e.g., Small et al., 2007). Besides that, it is believed that prosocial benefit is probably evaluated according to low reference points. People think of the power of the accumulation of many small amounts of money directed toward supporting a prosocial cause (Cialdini and Schroeder, 1976; Estrin, 2013). This is why the phrase "even a penny helps" is often heard. On the other hand, self-benefiting incentives may not show the same scope of insensitivity. When provided with self-benefiting incentives, people respond positively to the increases in the size of the incentive when incentives are high (Gneezy et al., 2011). In other words, people derive greater satisfaction from prosocial incentives than self-benefiting incentives when incentives are low, while the opposite is true when incentives are raised (Imas, 2014). Declining to participate in a green program in the presence of a prosocial incentive violates two injunctive norms (e.g., one supporting green program participation and one supporting donations to charity). Therefore, these people should feel more guilt which results in less satisfaction. Thus,

***H4:** The impact of the participation degree in green programs on warm glow-is qualified by an interaction of the different levels of self-benefiting incentives.*

H5: The impact of the participation degree in green programs on warm glow-is qualified by an interaction of the different levels of other-benefiting incentives.

Based on the above discussion, the theoretical framework is shown in Figure 1 as follows:

Figure1 (about here)

3. Methodology

Experimental research is the chosen method to carry out the three different studies. Experimental research is the best way to infer causality. It gives the eligibility to manipulate the independent variables in the studies and allows the interaction testing between them (Field and Hole, 2010). The current research used two methods of data collection in the true experiments; between-groups and within-subjects designs (Field, 2009). Within-subjects designs are used whenever feasible as they are more economical in terms of time and effort and are more sensitive due to the use of the same participants in all experimental conditions. Therefore, it will be guaranteed that no variation in score has occurred due to the random differences between the different participants in the different conditions (Field and Hole, 2010). However, whenever within-subjects designs are not feasible, between-subjects designs are used.

University students are the chosen sampling unit in the current research for the following reasons: 1) since differences between participants in the experiments fall under the extraneous variable, using the students' population is appropriate because they are more homogeneous. For example, they are of the same age, live in a similar environment, have a relatively similar socio-economic status, and have similar educational backgrounds; thus, controlling these differences can be conducted (Gravetter and Forzano, 2009; Stangor, 2010). 2) University students constitute 86% of the research subjects of the empirical studies in consumer research studies (Peterson, 2001) and around 75% of the topics in consumer research and marketing research (Peterson and Merunka, 2014). 3) University students' sample is appropriate if students represent a group of

interest. In other words, students are potential and prospective buyers and a major target market like any other group (Peterson and Merunka, 2014). 4) Sometimes, university students have the same basic characteristics, and they will interpret the meaning of the empirical conditions in the same way as any other group of individuals. Thus, relationships between conceptual variables found for university students will also be found in other groups of individuals (Stangor, 2010).

The current research includes three sequential experimental studies. Sequential experimentation is adopted as it helps build up knowledge in stages. The experimentation is gradually beneficial and much more effective than a one-stage test to find the best solution for a given problem or opportunity (e.g., Burgard et al., 2015; Simpson, 2015).

3.1. Study One: The Impact of Voluntary Green Program Participation

3.1.1. Design and Participants

Study one examines the effect of green program participation on warm glow and how warm glow mediates the relationship between participation in voluntary green programs and satisfaction. To achieve the study objective, a post-test-only control group design is used with a control group and a treatment group. Besides, a between-subjects design is adopted (Field and Hole, 2010).

The research population includes participants and non-participants of voluntary green programs in Egypt. A non-probability sample is used as there is no frame for the population. A convenience sampling technique is used that includes university students. Between-subjects design is used in which half the students represents the control group, and the other half represents the treatment group. Keppel and Wickens (2004) have suggested that using 30 participants per group is suitable. Hence, a minimum sample size of 60 students is required. Yet, a larger sample size of 80 students is used in which 40 of them play the green program participant role (treatment group) and the other 40 play the non-green program participant role

(control group).

3.1.2. Procedures and Measurements

Students are invited to the college lab to participate in an online scenario-based experiment. Each is provided with a questionnaire link to use. Half of the students (control group) are shown a picture of a college having normal trash bins (non-green program) and are asked to imagine that this is their college and that they always participate in throwing away trash in those trash bins. Then they are asked to answer some questions about warm glow and satisfaction. In comparison, the second half of the students (treatment group) are shown a picture of a college having recycling bins and are asked to imagine that this is their college and that they participate in such recycling program (green program) to keep their college clean. Then they are asked to answer some questions about warm glow and satisfaction. All the scale items are adapted from previous literature with slight modifications just to be consistent with the purpose and context of the research. Environmental sustainability is measured using four items developed by Pelozo et al. (2013). Warm glow is measured using four items developed by Giebelhausen et al. (2016). The satisfaction variable is measured using three items developed by Homburg et al. (2006).

3.2. Study Two: The Impact of Self-Benefiting Incentives in Voluntary Green Program Participation

Even though using incentives to encourage voluntary green program participation might be quite uncommon by marketers (Amrutha and Geetha, 2021). Nevertheless, using the right type and level of incentive is expected to enhance customers' warm glow and satisfaction (Giebelhausen, 2016). Therefore, to build upon the findings of the previous study, study two is carried out to examine how incentivizing participation using different levels (low, high) of self-benefiting incentives can play a moderating role.

3.2.1. Design and Participants

This study examines how manipulating the level (no, low, high) of self-benefiting incentives can affect the relationship between voluntary green program participation and warm glow. To do this, a factorial design is used. A 2 (participation: participate, do not participate) x 3 (incentive: no incentive, low self-benefiting incentive, high self-benefiting incentive) factorial design experiment is carried out. For the independent variable (participation), a between-groups design is used as it would not be meaningful for a person to imagine participating in a green program once and then asking him to imagine not participating in it. On the other hand, for the moderator variable (incentive), a within-subjects design is used due to its economic and sensitivity advantages. 'Carry-over' effects have been avoided by counterbalancing the order of the conditions. A convenience sampling of 60 university students was used in which 30 of them played the green program participant role, and the other 30 played the non-participant of the green program role.

3.2.2. Procedures

Students were asked to voluntarily participate in an online scenario-based experiment in the college's lab. They were asked to read three scenarios about their new college sustainability program that encourages recycling. First, they were shown a picture of the recycling station in the college's lobby. Then, half of the students were asked to imagine that they decided to participate in such a green program. In contrast, the other half of the students were asked to imagine that they decided to ignore that green program and not participate. In the first scenario, students imagined participating or declining to participate in the green program without using any kind of incentive as a motivation. In the second scenario, students were notified that participation in the green program gives its participant points that could be redeemed later for a

Pizza Hut gift card of value L.E 11 as a small self-benefiting incentive.¹ Finally, in the third scenario, students were notified that participation in the green program gives its participants points that could be redeemed later for a Pizza Hut gift card of value L.E. 80 as a large self-benefiting incentive. After each of these three scenarios, they were asked questions about warm glow and satisfaction with the garbage disposal service at their college.

3.3. Study Three: The Impact of Other-Benefiting Incentives in Voluntary Green Program Participation

After conducting study two, another question is raised of whether the results will change if other-benefiting incentives (e.g., giving charities these benefits) are used in green programs rather than self-benefiting incentives. This question will be addressed in study three.

3.3.1. Design and Participants

Study three examines how manipulating the level (no, low, high) of other-benefiting incentives can affect the relationship between voluntary green program participation and warm glow. To do this, a factorial design is used. A 2 (participation: participate, do not participate) x 3 (incentive: no incentive, low other-benefiting incentive, high other-benefiting incentive) factorial design experiment is carried out. Similar to study two, a between-groups design is used for the independent variable (participation), and a within-subjects design is used for the moderator variable (incentive). ‘Carry-over’ effects have been avoided by counterbalancing the order of the conditions. A convenience sample of 60 students was used in which 30 of them played the green program participant role, and the other 30 played the non-participant of the green program role.

3.3.2. Procedures

Students were invited to participate in an online scenario-based experiment in the college’s lab

¹ A pilot study was conducted to determine what participants consider to be a low or a high incentive. A survey was distributed online on 180 students to get an understanding of what they consider to be a low and a high incentive. Data were analyzed and most students consider L.E. 11 as a low incentive and L.E. 80 as a high incentive.

like studies one and two. Study three is exactly like study two, with the only difference in the incentives used in the second and third scenarios of the experiment. In other words, students were notified in these scenarios that participation in the green program gives its participant points that could be used later for charity donations of values L.E.11 (small other-benefiting incentive) and L.E. 80 (large other-benefiting incentive).

4. Results and Discussion

4.1. Results and Discussion of Study One: The Impact of Voluntary Green Program Participation

Based on Giebelhausen et al. (2016) guidance, no manipulation check was needed for the green program because previous literature has already used recycling programs as green programs. A pilot study with fifteen undergraduate students was conducted. This resulted in rephrasing and editing some statements.

The reliability test results showed that all variables with an alpha coefficient of more than .7 are considered good and accepted ($\alpha_{\text{environmental sustainability}} = .805$, $\alpha_{\text{warm glow}} = .907$, $\alpha_{\text{service satisfaction}} = .741$). An independent t-test was used to compare the green and non-green program participation groups. Results concerning warm glow are shown in figure 2a. For the participant group, the mean of warm glow was 8.52. For the non-participant group, the mean of warm glow was 6.45. In other words, participation in green programs increases warm glow. Results concerning satisfaction are shown in figure 2b. For the participant group, the mean of satisfaction was 8.02. For the non-participant group, the mean of satisfaction was 6.53. In other words, participation in green programs increases satisfaction.

Figure 2a (about here)

Figure 2b (about here)

Regression analysis was used to assess H1 and H2 and estimate the relationship between

participation in green programs and warm glow and the relationship between warm glow and satisfaction. There is a significant positive relationship between green program participation and warm glow ($p < .001$). This supports H1. Also, when regressing satisfaction on warm glow, a significant positive relationship between them is revealed ($P < .001$). This supports H2. In addition, the effect sizes were calculated. The effect size between participation and warm glow is .667 ($r = .667$), and the effect size between warm glow and satisfaction is .552 ($r = .552$). These effect sizes are considered large (Field and Hole, 2010).

Mediation Testing Results: Hayes's PROCESS macro (model 4) is used to check the direct and indirect effects (Hayes, 2017). The bootstrap procedure generated a 95% bias confidence interval that did not include zero (-0.9662 to -0.2420) for the indirect effect of participation on satisfaction through warm glow. After taking warm glow into account, the direct relationship between participation and satisfaction became insignificant ($P = 0.1711$). This indicates an indirect mediation only (full mediation exists). Thus, H3 is supported.

Study one is aimed to examine the effect of green program participation on warm glow and how warm glow mediates the relationship between participation in voluntary green programs and satisfaction. Results showed a significant positive relationship between green program participation and warm glow ($p < .001$). This means that participating in prosocial behavior such as green programs results in people experiencing positive emotions, while refusing to participate in green programs results in people experiencing negative emotions such as guilt or shame. This could be explained that people are inherently altruistic (Batson et al., 1989; Welsch et al., 2021) or that simply doing good leads to feeling good (Isen, 1970). This positive relationship is supported by the results of Wüstenhagen and Bilharz (2006) and Andrews et al. (2014). Also, results showed a significant positive relationship between warm glow and

satisfaction ($P < .001$). This means that the pleasure resulting from participating in green programs positively affects the satisfaction judgment. In contrast, the negative feelings and emotions resulting from refusing to participate in green programs negatively affect satisfaction. This positive relationship is supported by the results of Erevelles (1998), Harbaugh et al. (2007), and Giebelhausen (2016).

In addition to that, results revealed that warm glow acts as a full mediator between green program participation and satisfaction. This means that warm glow explains all the relationships between green program participation and satisfaction. This is supported by the results of Giebelhausen (2016).

4.2. Results and Discussion of Study Two: The Impact of Self-Benefiting Incentives in Voluntary Green Program Participation

At the beginning of the experiment, participants were asked about their personal views about environmental sustainability. The average degree of their preference for environmental sustainability was 8.5 out of 10. Students who participated in the experiment were also asked whether they would be willing to participate in the green recycling program or not if their college decided to introduce it. Results varied across the different cases. If the college gives no incentive when participating in the green program, 86.7% of the students were willing to participate. If the college gives a low self-benefiting incentive, the participation rate decreases dramatically to 50%. Finally, 86.7% of the students were willing to participate if the college gives a high self-benefiting incentive.

The reliability test showed that all variables have alpha coefficients of more than 0.8. A two-way mixed ANOVA was carried out. The incentive used significantly affected warm glow ($p < .0001$). Also, warm glow was significantly affected by whether people participated or did not participate in the green program being held ($p < .05$). The interaction effect was significant

($p < .001$). This means that the warm glow across the different incentives was different for participants and non-participants of the green program. Thus, H4 is supported.

Results concerning warm glow are shown in figure 3a. For the participant group, the mean of warm glow using no incentive was 7.2, the mean of warm glow using low self-benefiting incentive was 5, and the mean of warm glow using high self-benefiting incentive was 7.97. In other words, using low self-benefiting incentives decreases warm glow levels among the participant group, while an opposite pattern occurs when using high self-benefiting incentives. For the non-participant group, the mean of warm glow using no incentive was 5.3, the mean of warm glow using low self-benefiting incentive was 6.07, and the mean of warm glow using high self-benefiting incentive was 7.08. In other words, using self-benefiting incentives increases warm glow levels among non-participants.

Figure 3a (about here)

Figure 3b (about here)

Results concerning satisfaction are shown in figure 3b. For the participant group, the mean of satisfaction using no incentive was 7.96, the mean of satisfaction using low self-benefiting incentive was 6.22, and the mean of satisfaction using high self-benefiting incentive was 9.02. In other words, among the participant group, using low self-benefiting incentives decreased the satisfaction levels while using high self-benefiting incentives increased the satisfaction levels. For the non-participant group, the mean of satisfaction using no incentive was 6.02, the mean of satisfaction using low self-benefiting incentive was 7.27, and the mean of satisfaction using high self-benefiting incentive was 7.53. In other words, using self-benefiting incentives increased the satisfaction levels among the non-participants. Thus, H4 is supported. In addition, effect sizes were calculated. The effect size of the incentive is 0.816. This represents a very large effect. The effect size of the group is 0.392. This represents a medium effect. The effect size of the

interaction between incentive and group is 0.72. This represents a very large effect. Therefore, the change in warm glow using the different incentives or groups is a substantive finding.

In support of H1, regression indicated that there was a significant impact of participation in green programs on warm glow ($p < .05$), qualified by a significant interaction of participation in green programs and self-benefiting incentives ($p < .001$). In support of H2, regression indicated that there was also a significant positive relationship between warm glow and satisfaction ($p < .001$).

A moderated mediation analysis using Hayes (2017) PROCESS macro (model7) was used to assess the statistical significance of the indirect and direct effects. The bootstrap procedure generated a 95% bias-corrected confidence interval that did not include zero for the no incentive = 0 (-1.9991 to -1.1555), low self-benefiting incentive = 1 (.3361 to 1.5070) and high self-benefiting incentive = 2 (-1.4073 to -.1313). Results supported partial mediation as the direct effect of participation on satisfaction became significant after accounting for warm glow ($p = 0.0111$). Thus, H3 is supported.

Study two is aimed to examine how manipulating the level (no, low, high) of self-benefiting incentives can affect the relationship between voluntary green program participation and warm glow. Results showed that there is a significant positive relationship between participation in green programs and warm glow ($p < .05$), qualified by a significant interaction of participation in green programs and self-benefiting incentives ($p < .001$). Also, results showed a significant positive relationship between warm glow and satisfaction ($p < .001$). However, results supported only partial mediation as the direct effect of participation on satisfaction became significant after accounting for warm glow ($p = .0111$). This means that warm glow did not explain all the

relationships between participation in green programs and satisfaction. One possibility could be that offering people direct incentives has somehow changed the interaction framing for some of them from social to monetary (Kerr et al., 2012). In other words, people's satisfaction stemmed not only from prosocial behavior and warm glow motives but also from material self-interests that have played a role in increasing satisfaction levels.

Results also indicated that compared to green programs using no incentives, programs that offer low self-benefiting incentives result in a) lower levels of warm glow and satisfaction for the green program's participants, yet b) higher levels of warm glow and satisfaction for the green program's non-participants. Also, compared to green programs using no incentives, programs that offer high self-benefiting incentives result in a higher warm glow and satisfaction for the green program's participants and the green programs non-participants. Regarding non-participants, the higher warm glow and satisfaction could be explained by rewards and incentives reducing their shame and guilt feelings (Giebelhausen et al., 2016; Spielmann, 2020). Regarding participants, the lower warm glow and satisfaction in the case of low self-benefiting incentives could be explained that extrinsic motivation through incentives crowds out the intrinsic motivation of people willing to behave prosocially (Hossain and Li, 2014; Peloza et al., 2013). On the other side, the higher warm glow and satisfaction in the case of high self-benefiting incentives could be explained by the fact that motivated reasoning has played a role. In other words, people usually are more likely to reach conclusions they wish to reach but only when they can have a good justification for them. For example, people could have justified the appropriateness of taking a high incentive by believing that if they do not take it, someone else will take it anyway (Kunda, 1990). Also, literature has supported that people respond positively to the increases in the size of incentives when incentives are high (Gneezy et al., 2011). It is worth mentioning that the case of high self-benefiting incentives yielded the best results for both

groups in terms of satisfaction.

4.3 Results and Discussion of Study Three: The Impact of Other-Benefiting Incentives in Voluntary Green Program Participation

Students were asked about their personal views about environmental sustainability. The average degree of their preference for environmental sustainability was 8.57 out of 10. Students who participated in the experiment were also asked if they would be willing to participate in the green recycling program if their college decided to introduce it. Results varied across the different cases. If the college gives no incentive when participating in the green program, 97.5% of the students were willing to participate. Suppose the college gives a low or a high other-benefiting incentive, the participation rate increases to 100%. All variables had an alpha coefficient of more than 0.7, which is considered good (Field, 2009).

A two-way mixed ANOVA was carried out. Warm glow was significantly affected by the incentive used ($p=.016$). The main effect of the group variable showed that warm glow was significantly affected by whether people participated or did not participate in the green program held ($p<.0001$). In addition, the interaction effect was significant ($p<.0001$). This means that warm glow across the different incentives was different for participants and non-participants of the green program. Thus, H5 is supported.

Figure 4a shows results concerning warm glow. For the participant group, the mean of warm glow using no incentive was 7.2, the mean of warm glow using low other-benefiting incentive was 8.27, and the mean of warm glow using high other-benefiting incentive was 8.4. In other words, using other-benefiting incentives increases warm glow levels among participants. For the non-participant group, the mean of warm glow using no incentive was 5.33, the mean of warm glow using low other-benefiting incentive was 4.53, and the mean of warm glow using high other-

benefiting incentive was 4.42. In other words, an opposite pattern was observed among the non-participants, in which using other-benefiting incentives decreased warm glow levels. Figure 4b shows results concerning satisfaction. For the participant group, the mean of satisfaction using no incentive was 8, the mean of satisfaction using low other-benefiting incentive was 9, and the mean of satisfaction using high other-benefiting incentive was 9. In other words, using other-benefiting incentives increased the satisfaction levels, yet using low or high other-benefiting incentives was of no difference; they both led to the same satisfaction levels. For the non-participant group, the mean of satisfaction using no incentive was 6.8, the mean of satisfaction using low other-benefiting incentive was 6.2, and the mean of satisfaction using high other-benefiting incentive was 6.18. In other words, using other-benefiting incentives decreased the satisfaction levels among the non-participants, yet using low or high other-benefiting incentives was almost of no difference. The effect size of the incentive was .346. This represents a medium effect. The effect size of the group was .937. This represents a very large effect. The effect size of the interaction between incentive and group was .818. This represents a very large effect too. Therefore, the change in warm glow using the different incentives or groups is a substantive finding.

Figure 4a (about here)

Figure 4b (about here)

In support of H1, regression indicated that there was a significant positive relationship between participation in green programs and warm glow ($p < .001$), qualified by a significant interaction of participation in green programs and other-benefiting incentives ($p < .001$). In addition, the main effect of incentive on warm glow was significant ($p < .001$). In support of H2, regression indicated that there was also a significant positive relationship between warm glow and satisfaction ($p < .001$).

A moderated mediation analysis using Hayes (2017) PROCESS macro (model7) was used to assess the statistical significance of the indirect and direct effects. The bootstrap procedure generated a 95% bias-corrected confidence interval that did not include zero for the no incentive=0 (-1.1832 to -.6031), low self-benefiting incentive=1 (-2.1113 to -1.4508) and high self-benefiting incentive=2 (-2.6647 to -1.9208). Results supported full mediation as the direct effect of participation on satisfaction became insignificant after accounting for warm glow ($p=0.1190$). This means that warm glow did explain all the relationships between participation in green programs and satisfaction. Thus, H3 is supported.

Study three is aimed to examine how manipulating the level (no, low, high) of other-benefiting incentives can affect the relationship between voluntary green program participation and warm glow. Results indicated that there is a significant positive relationship between participation in green programs and warm glow ($p<.001$), qualified by a significant interaction of participation in green programs and other-benefiting incentives ($p<.001$). Also, results indicated a significant positive relationship between warm glow and satisfaction ($p<.001$). Results supported full mediation as the direct effect of participation on satisfaction became insignificant after accounting for warm glow ($p=.1190$). This means that warm glow did explain all the relationships between participation in green programs and satisfaction.

Compared to green programs using no incentives, programs that offer low or high other-benefiting incentives result in a) higher levels of warm glow and satisfaction for the green program's participants, yet b) lower levels of warm glow and satisfaction for the green program's non-participants. Regarding participants, the higher levels of warm glow and satisfaction could be explained that accepting to participate in a green program in the presence of a prosocial incentive as adherence to two injunctive norms; one supporting participation in green programs and one supporting charity donations. This results in more happiness and satisfaction. Regarding

non-participants, the lower levels of warm glow and satisfaction could be explained that declining to participate in a green program in the presence of a prosocial incentive as a violation of two injunctive norms, one supporting participation in green programs and one supporting charity donations. This results in more guilt feeling which results in less satisfaction. Finally, it is worth mentioning that in the case of low and high other-benefiting incentives for the green program's participants or non-participants, satisfaction levels did not change; both had the same effect. This finding supports what Imas (2014) concluded earlier: people are insensitive to the level of the prosocial incentive.

5. Research Contributions, Implications, Limitations, and Future Research

Research Contributions: The three studies suggest that warm glow mediates the relationship between green program participation and service satisfaction. Study one showed that participating in voluntary green programs increased warm glow, which helped to improve service satisfaction compared to not participating in these programs. The question raised is whether the different types and levels of incentives can influence the causal relationship between green program participation, warm glow, and service satisfaction. Results indicated that incentives could moderate between green program participation and warm glow. Using the right combination of incentives can enhance the customer experience and satisfaction.

This research contributes by giving insights on the customer satisfaction outcome. Preceding studies on green marketing and using incentives in prosocial behavior have always given attention to outcomes associated with participation (Giebelhausen et al. 2016), with little attention given to customer satisfaction despite being a valuable variable with importance all managers. This research combines the literature on satisfaction with prosocial behavior, resulting in the emotional benefit of warm glow leading to increased satisfaction. Besides, this research studies the satisfaction of all groups of people in green programs, either the participants or the

non-participants. In other words, past research in green marketing has always focused on the participants' group of the green programs and not the ones choosing not to participate even though both groups are considered customers for the firm, and satisfying both of them should be considered. This inclusion and comparison give more insights into how the satisfaction level differs based on voluntary green program participation. Furthermore, this research contributes to understanding how the levels (values) of the different incentives moderate the person's response to green programs. To the authors' knowledge, this is the first research that examines this point and addresses this notable gap in the literature.

Managerial Implications: The findings of this research make some contributions that managers can take advantage of. The results propose that managers should be open to voluntary green programs. Besides, using the right type (e.g., self-benefiting or other benefiting) and value of incentive (most appropriate incentive rates) can make the customers' experience more pleasant. Results also show that most people are willing to participate in green programs when available, convenient, and easy to use. Most people care about the environment and are not against green program initiatives. Managers can exploit this point by engaging their consumers in green activities. For example, Starbucks engages its community in sustainability by using green materials for producing, packaging, and delivering its products to customers (Vos, 2019).

Besides that, using the right value and type of incentive can play an important role in the customer experience. When deciding the level (value) of the incentive, the company must understand what incentive is considered to be small or large from the customer's perspective. Market research should be conducted to understand the customers' opinions about a small or a large incentive. Accordingly, the appropriate value of incentives in their green programs can be used. Results show that using any of the high self-benefiting incentives or low or high other-benefiting incentives results in a similar higher satisfaction level than using no incentives for the

people choosing to participate in the green programs. If it is up to managers, they will prefer to use low other-benefiting incentives as this will be the cheapest option among the three. However, results show that using the low or high self-benefiting incentives results in a higher satisfaction level than using no incentives for the people choosing not to participate in green programs. More specifically, using high self-benefiting incentives has shown better satisfaction results than low self-benefiting incentives. Accordingly, if managers consider only the satisfaction of people who choose to participate in green programs, then using any of the high self-benefiting incentives or low or high other-benefiting incentives is good. However, if managers consider the satisfaction of all groups of customers (participants and non-participants of green programs) as should be the case, then using high self-benefiting incentives is the best option available as this is the only incentive scheme resulting in the highest satisfaction levels among both groups. Yet, this might require a high budget, so if it cannot be afforded, then using no incentives at all will be the second-best option if the satisfaction of both groups of customers is to be considered.

Public Policy Implications: From a public policy perspective, there are several challenges to navigate. The government is responsible for supporting green and sustainable development initiatives. First, it should spread awareness about environmental issues among the general public, particularly children and teenagers. For example, the government can spread environmental education and culture by providing libraries with green corners. It can arrange colloquies and programs in schools and universities to make students aware of environmental issues (e.g., climate change and global warming). These activities increase the understanding of the importance of protecting the environment and participating in environmental initiatives. Second, the government should spread environmental awareness and the benefits of protecting the environment in the business sector (Peng et al., 2021). It should encourage companies and

organizations to carry out green initiatives and protect the environment, especially that going green can be costly sometimes in the short run. In other words, the government should offer them incentives to encourage these kinds of efforts. It can provide them with financial assistance, soft loans or tax incentives on environmental projects. Doing this will provide them with a budget to spend on green initiatives and make them willing to incentivize their green programs' participation to increase their customers' satisfaction. Government can provide awards for those engaging in environmental initiatives. It can also talk about and praise them in the media. This can enhance their reputation among customers and reduce skepticism about their green programs. It can encourage sustainable business practices by providing environmental training to the employees and advisory services and technical support for those aiming to apply sustainable policies. Third, the government should consider environmental evaluation when giving licenses for new businesses and ensure that existing businesses follow the required environmental standards and laws. Finally, Government should even impose heavy fines on companies violating environmental compliance.

Limitations and Future Research: The current research has several limitations that need further investigation. First, cautious interpretation of the findings of this research should be taken into consideration. This is because the data were collected from a convenient university student sample which may not represent the population of all green programs' participants and non-participants. Future research should use a more diverse population when collecting data for more validation. Second, this research used only one service category, garbage disposal service. Future research should repeat this study across different service categories to increase the generalizability of the results. Third, hypothetical scenarios were used as a stimulus to maximize internal validity. Future research should carry out a field experiment to outperform the limitations of a hypothetical web-based experiment to increase external validity. Fourth,

although the sample size was recommended by previous research (e.g., Keppel and Wickens 2004), it can be considered a small sample. Future research can use larger sample sizes and apply the study model to different countries for cross-cultural comparisons to better understand the incentivizing green programs phenomenon. Apart from addressing these limitations, this research can be extended in various ways. Future research might investigate how individual differences can play a moderating role. Future research might also investigate how other people (public setting) can affect the relationship between participation in green programs and satisfaction.

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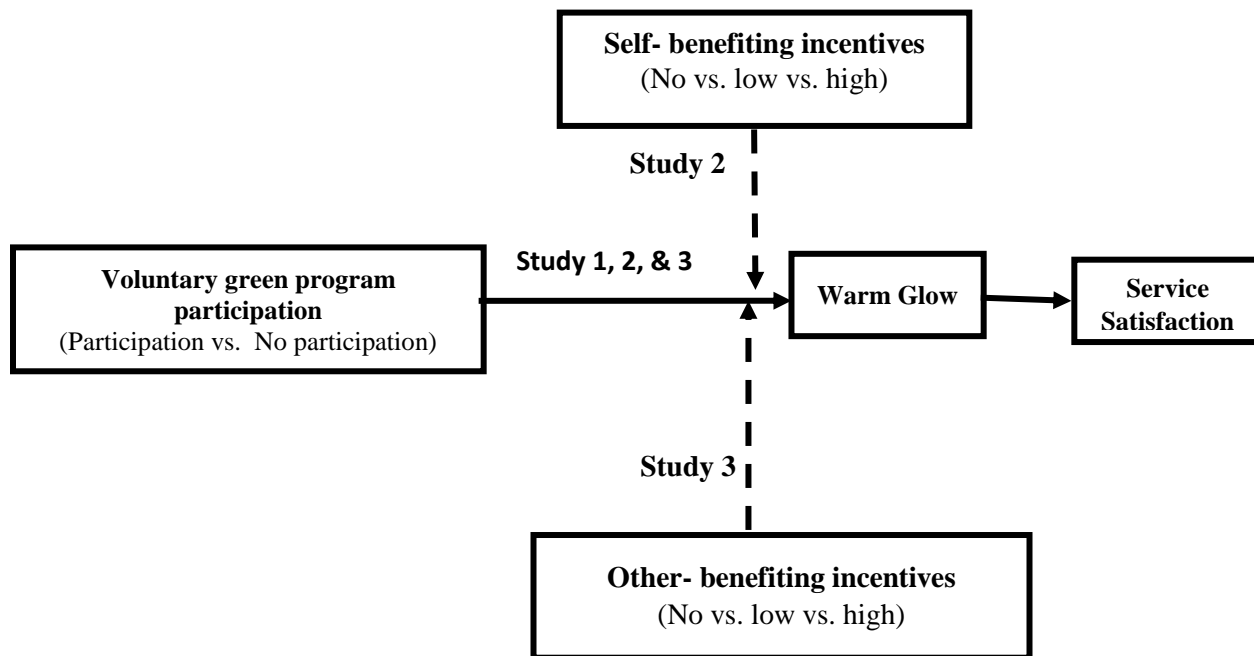


Figure 1 Theoretical framework

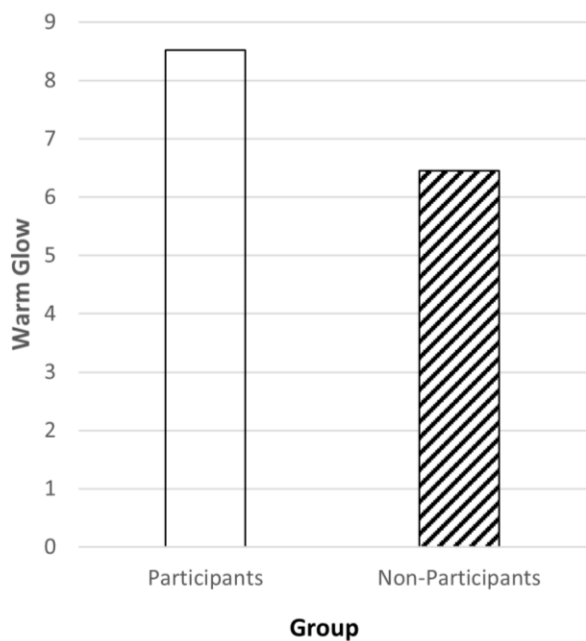


Figure 2a Study One Results (Warm Glow)

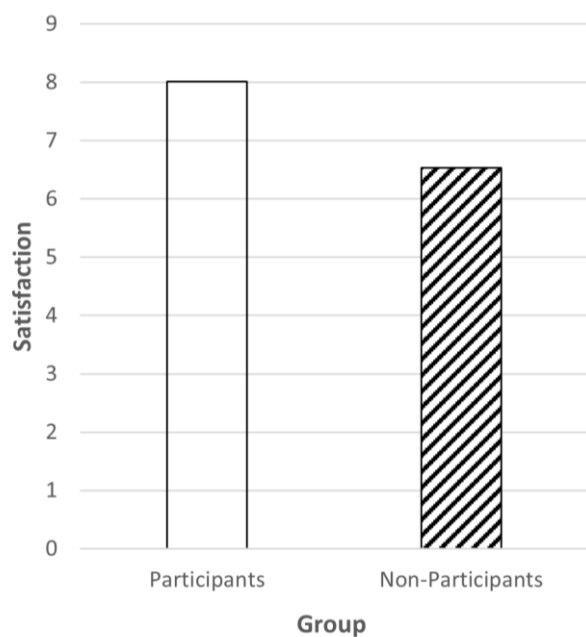


Figure 2b Study One Results (Satisfaction)

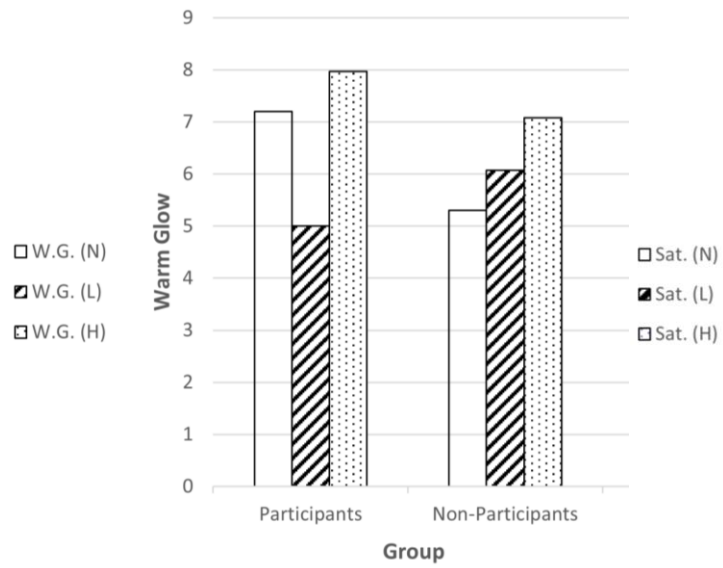


Figure 3a Study Two Results (Warm Glow)

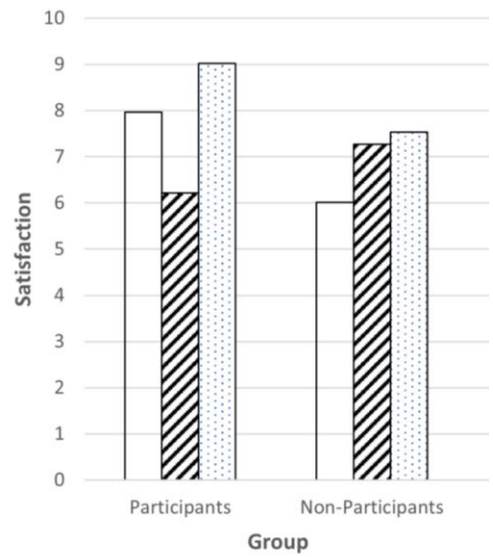


Figure 3b Study Two Results (Satisfaction)

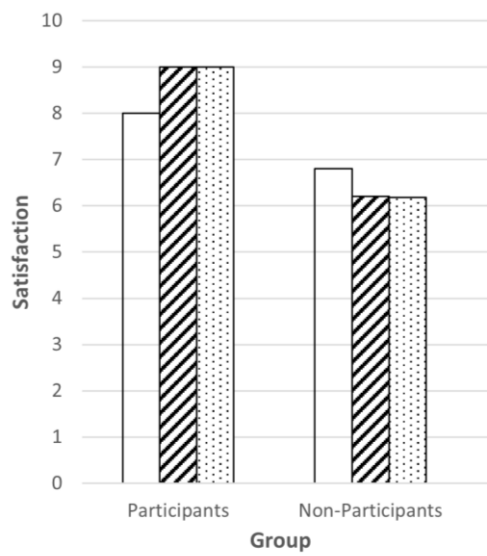
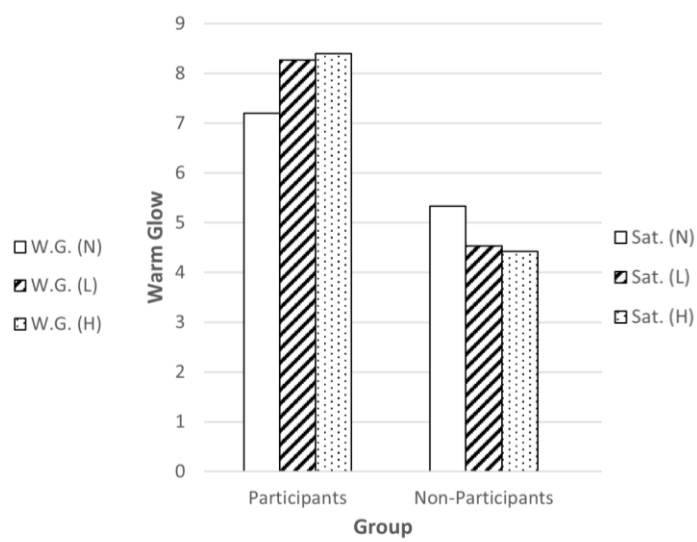


Figure 4a Study Three Results (Warm Glow)

Figure 4b Study Three Results (Satisfaction)