



Effects of a reward program on inducing desirable customer behaviors: The role of purchase purpose, reward type and reward redemption timing

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ABSTRACT

For capacity-constrained service firms, efforts to balance supply and demand have been centered on the management of demand, service processes and service employees. Despite the significant role customers play in the service process, few attempts have been made to manage customer roles toward that end. Meanwhile, concerns have been expressed about the potential negative impact on customer satisfaction by the firm's effort to steer customer behaviors for the firm's benefit. Thus, it is crucial to minimize these undesirable customer effects in such an attempt. In this study, we propose a customer reward program as a possible customer approach and empirically test its effectiveness.

Further, we test the impact of customer understanding of the firm's entitlement to profit upon the degree of the customer's voluntary behavior for the firm's benefit. The effect of justice evaluations of the reward program on customer adoption of the program is also examined. Finally, effects of customer characteristic (purchase purpose) and reward attributes (type and redemption timing) on the reward program's effectiveness are evaluated. Findings of this study contribute to the extension of the service capacity management literature, and offer service managers valuable insights about using a customer program as a means to better match supply and demand.

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1. Introduction

For service firms with relatively fixed capacity but highly time-varying demand, profitability depends largely on their ability to match supply and demand (Crandall and Markland, 1996). To take an airline as an example, its capacity is fixed by the number of planes it operates and the number of seats in the planes, but its demand varies considerably by time of day, day of week or week of year. Consequently, an airline's profitability depends upon its ability to select the most profitable mix of demand during high-demand periods and its ability to stimulate demand during low-demand periods. Hotels, restaurants or golf courses, to name a few, face similar challenges. Due to limited control over capacity management, these firms' efforts have been concentrated on demand management, such as moving or stimulating demand.

Differences exist among these firms, however, in the degree of capacity flexibility. To take a restaurant as an example, its capacity is typically defined by the number of customers that can be accommodated during a given meal period. Yet, its capacity is influenced by the duration of customer seat occupation as well. For a

100-seat restaurant, for instance, when the average dining duration is 1 h, the restaurant's hourly capacity is 100 customers. When the average decreases to 30 min, however, the capacity increases to 200 customers. For this reason, more restaurants are turning their attention to managing dining duration, particularly during high demand periods (Kimes, 1999). Similar interests have emerged in other service industries such as golf-courses and theme parks, where longer consumption duration decreases service capacity but does not necessarily increase revenue.

So far, efforts to reduce consumption duration (service time) have been concentrated in areas under management's direct control such as service processes and employees (Kimes and Robson, 2004; Sill, 1991). Efforts to manage customers have been limited to imposing dining time limits, which have triggered negative customer reactions. Therefore, it is vital that such a customer approach is designed and implemented in a way acceptable to customers. The current study intends to identify and test an approach which will benefit both service firms and customers by inducing customer's voluntary adoption of firm-friendly consumption behaviors.

Customers are more likely to perform their expected role in the service process when they are rewarded for such performance (Lovell and Wright, 2002). Company feedback to customers in a reward format makes customers feel cared by the company and thus motivates them to behave in a manner beneficial to

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the company (Dowling and Uncles, 1997). Therefore, we propose a customer reward as a means to induce customers' voluntarily reduction of consumption time and empirically examine its effectiveness.

The remainder of this paper is organized as follows. We first present the conceptual background of the current study, which is followed by the proposal of hypotheses. Research methodology and results will then be explained. The paper will be wrapped with discussions of the theoretical and practical implications of the findings.

2. Conceptual background and hypotheses development

2.1. Service capacity management

Since the late 1970s, efforts to help capacity-constrained service firms maximize revenue through a better match between supply and demand have been actively pursued (e.g., Cross, 1997). The term "revenue management (RM)" has been coined to refer to this stream of efforts and is defined as selling the right inventory to the right customer at the right price at the right time so as to maximize revenue (Smith et al., 1992). RM approaches are applicable to industries with distinct business characteristics such as relatively fixed capacity, time-perishable inventory, time-variable demand, and high fixed costs (Kimes, 1989). Further, in order to reap full benefits from applying RM approaches, firms should be able to segment customers, sell through advance reservations, prevent arbitrage of intermediaries, and accurately forecast demand (Vinod, 2004).

RM strategies are classified largely into busy- and slow-period strategies. The former strategies concentrate on selecting the most profitable mix of demand, while the latter strategies center on stimulating demand for capacity that would otherwise go unsold. Specific RM approaches include differential pricing, inventory optimization, and overbooking (Vinod, 2004). The primary focus of these RM approaches has lied on managing demand.

Capacity management efforts have been limited only to improving service processes, better training service employees (Sill, 1991), and adopting advanced communication technologies and process analysis tools (Kimes et al., 1998, 1999). These approaches pursue the goal of minimizing service time by eliminating unnecessary delays. Recently, the impact of physical service environments on customer consumption behaviors has received attention. An empirical study using a Mexican restaurant setting found that customers seated in a banquet-type seating took longer to dine than those seated in other types of seating (Kimes and Robson, 2004).

Meanwhile, concerns over these service time reduction approaches have been expressed. The negative effect of reduced dining duration on customer satisfaction has been empirically demonstrated (Noone et al., 2007), alerting management to consider the long-run customer impact of these approaches. Therefore it is crucial that any customer approach for the purpose of reducing service time is designed to ascertain customer acceptance. This study proposes and tests a customer reward as a potential candidate for such an approach.

2.2. Customer impact on service capacity

For service firms, customer roles in the service processes influence organizational productivity and performance (Hsieh et al., 2004). For this reason, service customers are described as productive resources and contributors to quality and value (Bitner et al., 1997). Service customers play a particularly important role in determining the service delivery time and therefore service capacity of a service firm. Therefore, it is of utmost interest service managers to induce customer behaviors leading to reduced service time, especially when demand exceeds capacity. As long as such

customer behaviors are voluntarily adopted, potential negative customer effects might be negligible (Namasivayam and Hinkin, 2003).

Service customers are at times considered as partial employees (Bowers et al., 1990; Keh and Teo, 2001). This makes the theoretical framework applicable to employees also relevant to service customers (Vaughan and Renn, 1999). Just as behaviors expected from employees can be categorized into in-role behaviors (or task performance) and extra-role behaviors (or organizational citizen behaviors) (MacKenzie et al., 1991; Motowidlo and Van Scotter, 1994; Williams and Anderson, 1991), behaviors expected from customers could also be classified similarly (Groth, 2005). While in-role (co-production) customer behaviors are defined as behaviors expected from customers for the successful production and delivery of services (Groth, 2005), extra-role (customer citizenship) behaviors are defined as customers' voluntary and discretionary behaviors which are appreciated when exhibited (Bettencourt and Brown, 1997) and include acts of cooperation, helpfulness, and kindness (Lengnick-Hall et al., 2000). Customers with citizenship engage in positive word-of-mouth, buy additional services, make recommendations to others, and show higher price tolerance (Bettencourt and Brown, 1997; Anderson et al., 2004).

The particular customer citizenship behavior of interest for the current study is customer cooperation during the service delivery process, specifically a customer's voluntary reduction of service time (dining duration). Customer cooperation has been demonstrated as a key contributor to the customer's own and other customers' quality perceptions and satisfaction in the service process (Kelley et al., 1990, 1992; Martin and Pranter, 1989). Cooperative customer behaviors are exhibited as trying to understand the service process, to be polite and respectful, to observe rules and policies, and to accept directions from the service provider (Bateson, 1985).

Cooperative customer behaviors are driven by the customer's internal motivation (Mills and Morris, 1986). According to the dual entitlement principles (Kahneman et al., 1986a,b), customer perceptions of and reactions to the firm's initiatives differ considerably depending on customer understanding of the reasons behind the initiatives (Bazerman, 1985). For example, unjustified price increase is perceived as unfair while price increase due to increase in cost is perceived as fair (Urbany et al., 1989). Accordingly, customer understanding of the business impact of reduced service duration is likely to affect the customer's cooperative behaviors. Kahneman et al. (1986a,b) argue that firms are entitled to profit while customers are entitled to value. The more customers understand that firms are entitled to profit and that service duration has significant impact on the firm's profitability, the more they are likely to adopt cooperative behaviors. Therefore, we propose the following hypothesis:

H1. The more customers understand the firm's entitlement to profit and the impact of service duration on the firm's profitability, the more customers are likely to show cooperative behaviors.

2.3. Justice evaluation of the reward program

Customers' justice evaluation of a reward program is likely to affect the effectiveness of the program (Chatman, 1991; Greenberg, 1987). Customer justice perception of a reward program is defined as the customer's satisfaction with what they receive relative to what they expect to receive in return for the efforts and sacrifices they make in the exchange relationship (Homans, 1958). When a reward program is perceived as unfair, customers lose the motivation to give what the reward program is expecting (Meglino and Ravlin, 1998) and further lose interest in establishing an exchange relationship with the reward provider (Ganesan, 1994). Conversely,

when perceived as fair, a reward program can stimulate customer's desire for an exchange relationship with the reward provider and induce positive customer attitudes toward the relationship (Moorman, 1991). Such stimulated desire and enhanced attitudes can contribute to the success of a reward program (Moorman, 1991). These arguments lead us to the following prediction:

H2. Customer justice evaluations of a reward program affect the customer willingness to adopt the reward program.

2.4. Customer rewards

Although customer citizenship behaviors refer to customer behaviors that are voluntarily displayed without being directed or explicitly rewarded (Groth, 2001), it has been shown that rewards can stimulate customer adoption of citizenship behaviors (Puffer, 1987). Offering rewards enhances customer justice perception and as a result stimulates customer adoption of the rewarded behaviors (Moorman, 1991). Service customers are more likely to perform their roles when they are rewarded for such behaviors (Yi et al., 2004). It is because customers feel cared when they are rewarded for their cooperative behaviors (Dowling and Uncles, 1997; Lovelock and Wright, 2002).

Other explanations can be drawn from studies on employee rewards. Rewards influence employee performance (Lee et al., 2006). When provided with a clear and specific reward program such as promotions and bonuses, service employees are more likely to demonstrate service-oriented behaviors (Hartline and Ferrell, 1996). Since employees are selfish beings pursuing self satisfaction, their behavior for the firm's interest has to be motivated through proper benefits that enhance their satisfaction (Barnard, 1973). In general, individuals try to return the benefits they receive from others (Homans, 1958). Thus, we put forth the following:

H3. Customers are more likely to display expected behaviors when they are rewarded for such behaviors than when they are not.

2.5. Customer choices

When a reward program is presented as an option, the degree to which customers will exhibit the expected behavior depends on their choice of the option. According to the social exchange theory (Barnard, 1973; Blau, 1985) and the exchange relation theory (Lawler and Yoon, 1996), customers who choose to take advantage of the reward program are more likely to exhibit the rewarded behaviors. Hence, we propose the following:

H4. When a reward program is presented as a choice, customers who choose to take advantage of the program are more likely to show the expected behaviors.

2.6. Reward attributes and customer characteristics

The effectiveness of a reward program can also depend on the attributes of the program. The study by Keh and Lee (2006) examined the impact of two attributes of a reward program (reward redemption timing – immediate vs. delayed; and reward type – direct vs. indirect) on customer responses. Results showed that customers favored rewards directly related to the products and services sold such as price discounts (compared to discount coupons for other products or services) and rewards that can be redeemed immediately (compared to later in time). Kivetz and Simonson (2002) found similar results. Dowling and Uncles (1997) offered the easiness of redemption as the reason for the favorable outcome for the immediate redemption. Rothschild and Gaidis (1981) suggested, however, that in order to maintain the intended customer

Table 1
Experimental design.

	Utilitarian purpose		Hedonic purpose	
	Direct	Indirect	Direct	Indirect
Immediate				
Delayed				

motivation over a long period of time, a delayed redemption could be more effective.

The effectiveness of a reward program can also depend on the customer. Noting the often missing providers' understanding of customer needs and expectations in the design and implementation of a reward program, some scholars emphasized the importance of evaluating the effectiveness of a reward program from customer perspectives (O'Brien and Jones, 1995; Sharp and Sharp, 1997). Customer needs and preferences tend to vary by their purchase purpose, which can be categorized largely into two types: utilitarian and hedonic (Babin et al., 1994). Customers with a utilitarian purpose are likely to be concerned with efficiency and timeliness of the purchase while customers with a hedonic purpose are concerned with the potential entertainment and enjoyment aspects of the purchase (Hirschman and Holbrook, 1982). The effect of a reward program has been shown to lie in the extent to which it supports an individual's goals (Brendl and Higgins, 1995). Hence, when the purchase purpose is hedonic, a reward that supports the hedonic goal is likely to be more effective.

Taken together, we propose the following two hypotheses:

H5. The attributes of a reward program determine its effectiveness.

H5.1. Reward type determines the effectiveness of a reward program.

H5.2. Reward redemption timing determines the effectiveness of a reward program.

H6. The effect of the reward type and timing on the effectiveness of a reward program depends on the customers' purpose of purchase.

3. Research methods

3.1. Research context

A customer survey with a scenario-based experimental design was used to test our hypotheses. A restaurant context was chosen for the scenario for three reasons. First, the restaurant industry has actively applied RM approaches in an effort to better balance supply and demand (Kimes et al., 1999). Second, a restaurant's service capacity depends greatly upon customer dining behaviors. Third, restaurant customers' needs and preferences tend to vary widely by segments (Khan, 1991).

3.2. Experimental design and manipulation

Scenarios were created using 2(dining purpose: utilitarian vs. hedonic) × 2(reward redemption timing: immediate vs. delayed) × 2(reward type: direct vs. indirect) experimental conditions. Scenario methods have been well demonstrated as appropriate for studies of our purpose (Bitner, 1990). The experimental design for this study is summarized in Table 1.

Since the test for Hypothesis 1 does not require information on the reward program, each scenario was split into two parts. Questions pertaining to Hypothesis 1 were asked after only the first part of the scenario was presented, and all the remaining questions were

Exhibit 1: A sample scenario

The first part of the scenario

While wondering what to have for lunch, I decided to go to a family restaurant nearby for a quick and simple lunch with a few fellow workers who were also wondering what to have for lunch. The family restaurant we chose was well known for its leading role in forming the trend in the family restaurant business and was fast growing. The atmosphere of the restaurant was very lively with cheerful music. Employees looked young and full of energy. The restaurant's menu consisted of appetizers such as salad, onion rings, buffalo wings, main menus such as steak, pasta, rib, desserts such as brownie and various types of cake, and a variety of drinks. Menu price ranged between \$7.00 and \$8.00 for appetizers, \$15.00 and \$30.00 for main dishes, \$4.00 and \$7.00 for desserts and \$3.00 and \$7.00 for drink. During lunch time, this restaurant is always crowded and it is almost impossible to get seated without waiting. It is not very uncommon to observe some customers leave for another restaurant due to long waiting time. For this reason, during peak hours, the manager of this restaurant wants customers to quickly finish their meal and leave without lingering too long at the table after finishing the meal.

The second part of the scenario

This family restaurant offers a special reward program in order to motivate customers to reduce their dining duration. The program reads as follows:

"If you finish your meal within 30 min after all of your ordered food is delivered, we will offer you a 20% discount on your total bill. If you would like to participate in this event, please let your server know at the time of ordering your food."

asked after the second part of the scenario with information on the reward program was presented (see Exhibit 1 for a sample scenario).

In the first part of the scenario, participants were asked to imagine visiting a family restaurant during a busy lunch hour during which it is impossible to be seated without waiting. In order to create a consistent image of a family restaurant among respondents, the restaurant was described as leading the family dine-out trend in the industry, rapidly growing, and offering a full range of western style menus with the price of the main course ranging between \$15 and \$30. In order to help respondents understand the restaurant's interest in reducing dining duration during the busy hours, it was mentioned in the scenario that the restaurant management appreciates customers finishing their meals quickly and not lingering in the table too long after finishing their meals.

In order to manipulate the purchase purpose, participants were asked to imagine going to the restaurant for a quick and simple lunch with random fellow workers who also happen to go for lunch (utilitarian purpose) or to meet with a few close friends over lunch (hedonic purpose).

In the second part of the scenario, participants were told that the restaurant offers a reward program in order to motivate customers to reduce dining duration. Stated in the scenario was "Our restaurant will offer you a reward if you finish your meal within 30 min after all of your orders are delivered." The reward type was manipulated as either a discount of the total bill by 20% or a gift certificate for various cultural products and services equivalent to 20% of the total bill. The discount percentage was determined based on interviews with a few restaurant managers who have tried a similar promotion before. The reward redemption timing was manipulated

as an immediate offering of the discount or a gift certificate at the time of payment, or as an issuance of a coupon which entitles the holder to the discount or a gift certificate on the next visit to the restaurant.

We conducted a pre-test of our survey instrument among 40 graduate students (five per scenario) enrolled in a business school at a major university in Seoul, Korea, and found no major issues with the instrument in terms of the clarity of the scenario and reliability of the measures.

3.3. Respondents

We collected approximately 20 responses for each scenario (a total of 164 valid responses), which is deemed large enough for our hypothesis testing methods (Cohen, 1988). We used a convenience sample of Korean travelers waiting to board an airplane at an international airport in Seoul, Korea. We chose airline travelers for their high likelihood of having dined out. To ensure that participants are restaurant customers, responses with an average monthly dining frequency of zero were removed from analysis. Responses with a high level of inconsistency (i.e., 1 vs. 7) between the two items for the same scale were removed.

Participation in the survey was voluntary and no compensation was offered. Participants were mostly in their 20s (80.9%), 30s (13.5%) and 40s (5.6%), with slightly more female participants (55%) than male (45%). They were mostly well educated (78.4% college graduates and 11.8% graduate school graduates). This participant profile was confirmed as similar to the profile of Korean family restaurant customers (Kim, 2011; Kim and Kim, 2010).

3.4. Measures

3.4.1. Customer understanding

The level of customer understanding of the restaurant's entitlement to profit was measured by a 5-item scale developed based on the work by Kahneman et al. (1986a,b) and Urbany et al. (1989) (Table 2). They showed that customer perceptions of the firm's initiatives differ considerably depending on customer understanding of the reasons behind the initiatives. Therefore, we first measured how well respondents understood the impact of meal duration on the restaurant's profitability and then measured customer fairness perceptions of the restaurant's effort to reduce the meal duration using a reward program. Specifically, we asked respondents whether they thought that the effect of the restaurant's effort to reduce meal duration on the restaurant's profitability was significant or considerable. Then we asked respondents whether they thought that it was fair or acceptable that restaurants employ business practices such as a reward program to motivate customers to behave in a way to help restaurants maintain profits. Respondents were asked to express the degree to which they agreed to each of these statements on a 7-point Likert scale with 1 indicating 'strongly disagree' and 7 'strongly agree'.

3.4.2. Customer willingness to adopt the reward program

We measured customer willingness to adopt the reward program with a question "Will you adopt the proposed reward program?" on a 6-point Likert scale. An even-numbered scale was used in order to be able to divide respondents into two groups: adopters and non-adopters.

3.4.3. Customer efforts to reduce dining duration

Customer behaviors promoted by a reward program become expected when customers adopt the program. Therefore, customer behaviors exhibited in return for a reward are more co-production behaviors than citizenship behaviors. Particularly in our study context, the customer behavior promoted by the reward program

Table 2
Scale items, construct validity and reliability.

Item	Standardized regression weights	Cronbach's α
Customer voluntary efforts to reduce service time <i>without</i> a reward offered		.84
I will perform all the tasks that can help this restaurant reduce customer dining duration.	0.82	
I will try to help this restaurant with those things that I can do to reduce my dining duration.	0.69	
I will adequately complete behaviors that help this restaurant reduce customer dining duration.	0.88	
Customer efforts to reduce service time <i>after</i> a reward was offered		.91
I will perform all the tasks that can help this restaurant reduce customer dining duration, as required by the reward.	0.90	
I will try to help this restaurant with those things that I can do to reduce my dining duration, as required by the reward.	0.82	
I will adequately complete behaviors that help this restaurant reduce customer dining duration, as expected by the reward.	0.91	
Justice evaluation of the reward		.88
What this restaurant offers in return for customer efforts to reduce dining duration is acceptable.	0.87	
What this restaurant offers in return for customer efforts to reduce dining duration is realistic.	0.79	
The amount of reward is acceptable.	0.80	
The form of reward is acceptable.	0.76	
The timing of reward redemption is acceptable.	0.63	
Customer understanding of the firm's entitlement and service time impact on the firm's profitability		.88
I think the revenue impact of reduced dining duration for a restaurant is considerable.	0.86	
I think the profit impact of reduced dining duration for a restaurant is substantial.	0.86	
I think it is acceptable that restaurants try to reduce dining duration through various efforts such as offering customer rewards.	0.51	
I consider a restaurant practice such as offering customer rewards to encourage customers to reduce dining duration as acceptable.	0.58	
I think that, despite some inconveniences, customers should accept restaurant practices that help the restaurant maintain profitability.	0.57	

is critical to the profitable delivery of the service. Hence, we considered these behaviors as co-production behaviors and measured using the co-production scale proposed by Groth (2005). We selected the three most applicable items in the scale and modified them to fit our study context (Table 2). Meanwhile, customer behaviors to help restaurants reduce dining duration before a reward program is offered can be considered as citizenship behaviors and therefore were measured with expressions such as required, expected or responsibilities removed from the co-production behavior scale.

3.4.4. Justice evaluation of the reward program

Customer justice perceptions of a reward program are defined as the degree to which the program satisfying customer expectations for compensation in return for the customer efforts and sacrifices (Homans, 1958). Accordingly, we adapted the distributive justice scale proposed by Tax et al. (1998) into a 5-item, 7-point Likert scale that fits our study context (Table 2).

4. Results

4.1. Construct validity and reliability

The validity of constructs was tested through standardized regression weights in confirmatory factor analysis and was all found acceptable at 0.5 or higher (Aluja et al., 2006) (Table 2). The construct reliability was assessed using Cronbach's alpha, and was all found acceptable at 0.8 or higher (Nunnally, 1978) (Table 3).

4.2. Hypothesis tests

In order to test H1, we conducted a regression analysis with the customer understanding as an independent variable and customer voluntary efforts to reduce dining duration as a dependent variable. In order to control for the potential effects of gender, age, customer price sensitivity, and purchase purpose, these variables were included in the model as independent variables. As shown in Table 3, the effect of customer understanding was significant at

Table 3
Regression analysis results to test H1.

Independent variable	<i>b</i>	<i>t</i> -statistic	Sig.
Gender	.037	.472	.638
Age	.115	1.460	.146
Price sensitivity	.073	.909	.365
Purpose of purchase	-.052	-.669	.504
Customer understanding	.283	3.636	.000

Dependent variable: customer voluntary efforts to reduce dining duration.

$t = 3.636$, $p < .001$, offering supports for H1 (Table 3). None of the control variables showed significant effects.

Another regression analysis was conducted to test H2. Customer justice evaluation of the reward program was regressed on the customer willingness to adopt the program. In order to control for the effects of customer characteristics, gender, age, price sensitivity, understanding of the firm's entitlement to profit, and purpose of dining were included in the model as independent variables. In order to control for the effects of reward program attributes, reward type and reward redemption timing were also included in the model. The effect of the customer justice evaluation of the reward program was found significant ($t = 7.805$, $p < 0.001$), providing supports for H2 (Table 4).

The effect of a reward program on customers' voluntary efforts to reduce dining duration (H3) was tested through a paired *t*-test. The degree of customer voluntary efforts after being offered

Table 4
Regression analysis results to test H2.

Independent variable	<i>b</i>	<i>t</i> -statistic	Sig.
Gender	-.091	-1.456	.148
Age	-.162	-2.598	.010
Price sensitivity	.102	1.573	.118
Customer understanding	.084	1.227	.222
Purpose of purchase	-.078	-1.273	.205
Reward type	.121	1.994	.048
Reward timing	-.058	-.951	.343
Justice evaluation of reward	.540	7.805	.000

Dependent variable: customer willingness to adopt the reward program.

Table 5
Results of one-way ANOVA to test H5 and H6.

Independent variable	Mean-square	F-statistic	Sig.
Purpose of purchase (purpose)	.046	.023	.879
Reward type	4.600	2.302	.133
Reward timing	1.674	.838	.363
Purpose × Reward type	8.608	4.307	.041
Purpose × Reward timing	8.284	4.145	.045
Reward type × Reward timing	1.168	.585	.447
Purpose × Reward type × Reward timing	.148	.074	.786

a reward program ($M = 4.035$) was significantly higher than before ($M = 3.006$) ($t = 8.137, p < 0.001$), leading to the acceptance of H3.

In order to test H4, we first divided the respondents into two groups by their intention to take advantage of the reward program. Those who selected a response rating of 3 or lower in the 6-point Likert scale question were grouped as non-adopters (67 respondents) and the others as adopters (97 respondents). We then conducted a t -test between the two groups on the changes in the level of voluntary efforts after compared to before being offered the reward program. The change was significantly greater in the adopter group ($M = 1.625$) compared to that for the non-adopter group ($M = 0.138$) ($t = 6.450, p < 0.001$), and therefore H4 was supported.

In Hypotheses 5 and 6, we proposed the impact of the reward program attributes and the customer purpose of dining on the effectiveness of the reward program. Accordingly, only responses from the program adopters were used in these hypotheses tests. We conducted an analysis of variance (ANOVA) with the purpose, reward type and reward redemption timing as independent variables and the difference in the level of customer efforts before and after the offering of the reward program as a dependent variable. As seen in Table 5, no main effect was significant but two interaction effects were. That between dining purpose and reward type and that between dining purpose and reward redemption timing were significant ($F = 4.307, p < 0.05$ and $F = 4.145, p < 0.045$ respectively). The mean differences by the purpose, reward type and reward redemption timing are shown in Table 6. The interaction effects are visualized in Figs. 1 and 2.

5. Discussion and managerial implications

The principal purpose of the current study was to explore a customer approach which capacity-constrained service firms can use to effectively increase service capacity. The specific approach proposed and tested was a customer reward in return for customer efforts to help the service firm reduce service time. Through analyses of data collected using a customer survey employing scenarios, the effectiveness of the proposed approach was assessed in two areas: overall increase in customer efforts regardless of the customer's adoption of the reward program (H2) and increase in efforts among customers who adopted the program compared to those who did not (H3). Results provided supports for both H2 and H3, indicating the usefulness of a reward program as a means to induce desirable customer citizenship and co-production

Table 6
Mean difference in the level of customer efforts to reduce service time between with and without the reward offered and adopted.

	Utilitarian purpose		Hedonic purpose	
	Direct	Indirect	Direct	Indirect
Immediate	.533 (1.390) ^a	1.433 (1.529)	1.666 (1.806)	1.083 (2.037)
Delayed	.566 (1.119)	1.416 (1.559)	.904 (1.480)	.650 (1.644)

^a Figures in parentheses are standard deviations.

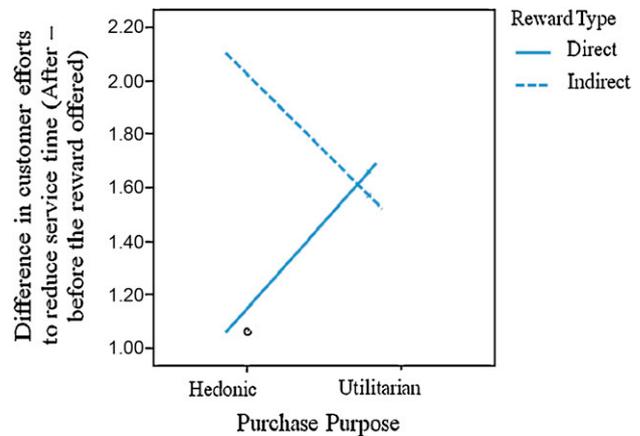


Fig. 1. The interaction effect of purchase purpose and reward type on the mean difference with and without the reward offered.

behaviors, specifically customers' voluntary reduction of service consumption duration.

It was also shown that customers with better understanding of the firm's entitlement to profit and the influence of their consumption behaviors on the firm's profitability were more likely to engage in firm-beneficial behaviors (H1). This finding demonstrates the importance of the service firm's efforts to enhance such customer understanding. This could be accomplished through effective customer communications and educations.

However, firms have to be careful not to trigger customer perceptions of unfairness that the firms' entitlement to profit is pursued at the sacrifice of customers' entitlement to value. As verified by the test result for H2, customer justice perceptions of the firm's effort (reward program) have a significant impact on the customer behaviors (willingness to adopt the program). When perceived unfair, firm efforts will not be able to induce desired customer responses. In other words, what is offered as a reward in return for the sacrifice born by the customer has to be equally valuable.

Post hoc analyses of the regression results for H2 demonstrated that two control variables (age and reward type) are indeed influential on customer willingness to adopt the program. The simple regression result for age showed a significant impact of age ($b = -.054, p < 0.05$). This means that in general older customers are less likely to adopt the program. Therefore, this type of program might be more effective in restaurants targeting young generations. The result of an independent t -test for reward type showed only a marginally significant impact ($p < 0.1$).

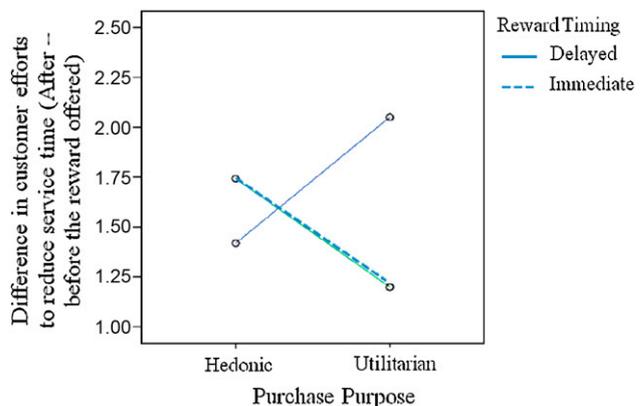


Fig. 2. The interaction effect of purchase purpose and reward timing on the mean difference with and without the reward offered.

It is also revealed that the reward program design matters in the program's effectiveness. A noteworthy observation is that the effectiveness of a particular reward attribute depends on the customer. Test results of two reward design variables (type and redemption timing) and one customer variable (purchase purpose) showed that the effectiveness of each reward attribute depends on the customer's purchase purpose. Post hoc *t*-test results revealed that the reward type mattered only when the purchase purpose was hedonic ($p < 0.05$) and indirect rewards were more effective ($M = 2.06$ for indirect; $M = 1.06$ for direct). Redemption timing mattered marginally only when the purchase purpose was utilitarian ($p < 0.10$) and delayed redemption was more effective ($M = 2.05$ for delayed; $M = 1.18$ for direct).

This finding is not surprising. It has been shown that the effect of a reward lies in the extent to which it supports an individual's goal (i.e., hedonic vs. utilitarian) (Brendl and Higgins, 1995). The indirect reward used in this study was a certificate for cultural products and services. Therefore, the finding that the improvement in customer efforts to reduce service time was superior when both the purchase purpose and the reward type were hedonic shows a sort of fit between the two.

The effect of reward redemption timing (immediate vs. delayed) is also known to depend on the customer. For example, Keh and Lee (2006) showed that, in invoking customer loyalty, delayed rewards were effective only among satisfied customers. In our study, delayed rewards were effective in improving customer efforts to reduce service duration only among customers whose purchase purpose was utilitarian. The higher impact of delayed rewards usually involves the consumer undervaluing the redemption cost (Kivetz and Simonson, 2002, 2003). In our study, the utilitarian purpose was manipulated as going to a restaurant for a quick and simple lunch while at work. Therefore, respondents could perceive going back to the same restaurant in the future as a highly likely event and therefore discount the redemption cost associated with the delayed reward. Further, although it could only be a cultural phenomenon, delayed redemption might make respondents feel looking less economy conscious. However, this latter explanation is only speculative and requires future substantiation research.

Provided that reward programs should be designed to strengthen the value proposition of the organization and generate expected customer responses (Cigliano et al., 2000), our findings on the type and timing of rewards offer service managers an important insight about the design of the reward program. In order to successfully induce desired customer co-production behaviors through a customer reward program, the design of the program should be differentiated by the customer's purchase purpose. Specifically, it is essential that the reward type is aligned with the purchase purpose when the purpose is hedonic and that the reward redemption time is delayed when the purpose is utilitarian.

6. Limitations and future research directions

Findings of this study need to be interpreted with a caution due to following limitations. First, limited to a single study in a single service industry and in a single culture, findings require replications and extensions to other types of services before generalized. Particularly since this study involves customer compliance behaviors which tend to vary widely across cultures, extended future studies in different cultural contexts are warranted. Also, participants in the current study were rather young generations. Provided that customer behaviors tend to vary by age, future studies should include older generations.

Second, this study relied on scenarios to provide the stimulus. Although commonly used for research of our study's nature,

scenarios lack the richness of an actual service encounter. Third, differences in responses could have been caused by the differences in the familiarity of the respondent with the type of reward program tested in this study. According to the study by Wirtz and Kimes (2007), customer familiarity with a particular business practice causes significant differences in customer responses. Therefore, future studies should control for the effect of customer familiarity.

Fourth, there could have been some confounding effects between the utilitarian and the hedonic purpose scenarios. Although described as pure companions rather than as someone to socialize with, the utilitarian purpose scenario also involved dining out with others. Fifth, no information on who in the party is paying for the meal was offered in the scenario and therefore different assumptions in this regard could have led to differences in responses. The study by Wirtz and Kimes (2007) showed that customers tend to respond differently depending on whether they are paying for the purchase or not. A future study should be more specific in this regard.

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