



# Attitudes and orientation toward vegetarian food in the restaurant industry

Vegetarian food

## An operator's perspective

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### Abstract

**Purpose** – The current paper aims to explore the attitudes of decision makers in restaurants in Puerto Rico toward vegetarian food, and examine the restaurants' orientation toward vegetarianism and the challenges they face in catering to vegetarian patrons.

**Design/methodology/approach** – A survey instrument was developed to include 21 items representing the various attitudes and views toward vegetarian food; restaurant characteristics; and participant's demographic information. A total of 92 face-to-face structured interviews were conducted among various independent family restaurants located in the metropolitan area of San Juan, Puerto Rico.

**Findings** – The findings suggest that although the participants certainly recognize the value of vegetarian food for their restaurants, they are still unaware or uninformed about many issues related to vegetarianism and vegetarian customers. Moreover, the study also raises some worrying concerns as to the attentiveness of restaurants to the needs of vegetarians.

**Originality/value** – The study raised important practical implications for restaurants in San Juan and, potentially, for restaurants in other destinations that share the same challenges. Perhaps the most important implication that emerges is the need to educate the decision makers in restaurants (i.e. owners, managers and chefs) regarding critical issues related to vegetarians and vegetarian food.

**Keywords** Vegetarianism, Restaurants, Attitudes, Managerial perspective, Menu choices, Vegetarians

**Paper type** Research paper

### Introduction

Vegetarian: a person who eats only side dishes (Lieberman, 1983, p. 213).

Vegetarian food is on the rise among both vegetarians and non-vegetarians, resulting in an unprecedented demand for meatless options (Greenway, 2010; Lanou, 2007). Nevertheless, it has been widely argued that restaurants often do not adequately address and utilize this important trend, despite the severe financial crisis and fierce competition that characterizes the restaurant industry (Perlik, 2010; Shani and DiPietro, 2007). More recently, certain culinary developments (such as the "Meatless Mondays" movement) seem to have a positive effect on the attitudes toward vegetarian



food in restaurants and provide some room for optimism (Buzalka, 2009; Yee, 2004). These indications, however, are based on anecdotal evidence such as articles in foodservice trade magazines and personal impressions of restaurant practitioners, rather than reliable empirical-based knowledge.

Indeed, the academic literature has largely ignored vegetarianism as a research theme in the context of the foodservice sector, which has led to a lack of information that could contribute to the understanding of this critical issue. Consequently, very little is known about the attitudes and perceptions of decision makers in restaurants (e.g. restaurateurs and chefs) regarding vegetarian food, as well as the challenges and difficulties involved in catering to the needs and wants of vegetarians. In this respect, the trade magazine, *Nation's Restaurant News*, mentioned adding vegetarian/vegan options to the menu as one of its top suggested strategies for improving business. It should be noted that catering to vegetarians is a challenging task that requires knowledge-based management that relies on thorough understanding of the vegetarian segment and its distinctive characteristics as well as familiarity with vegetarian cooking techniques, attractive recipes and handling animal-free ingredients (Licata, 2009).

The current study aims at contributing to the literature by surveying representatives from various restaurants located in the metropolitan area of San Juan, the capital city of the Commonwealth of Puerto Rico, on a variety of issues related to vegetarianism. San Juan is the island's cultural, economic and tourist center, and is characterized by an abundance of tourism and hospitality attractions and facilities. As this is an international tourism destination, local restaurants are required to cater to a wide variety of customers and to address the growing demand for vegetarian food. The main objective of the research is to explore the participants' attitudes toward vegetarian food, as well as to gain an understanding of their orientation toward vegetarianism and of the challenges their restaurants face, as a result of their catering to vegetarians. The results of the study are expected to yield useful information to the literature on vegetarianism, as well as to provide practical implications for restaurants.

## **Background literature**

### *Vegetarianism and vegetarians*

Although by and large the most valued and common sort of nutrition comprises animal-based foods (Beardsworth and Bryman, 2004), millions of people worldwide choose to adopt a vegetarian lifestyle. Vegetarianism is often depicted as "a dietary pattern that is characterized by the consumption of plant food and the avoidance of some or all animal products" (Perry *et al.*, 2001, p. 406). In other words, vegetarianism involves "the belief and practice of eating foods obtained exclusively or partially from the vegetable kingdom" (Janda and Trocchia, 2001, p. 1205). Despite the common perception of vegetarians as a homogenous group, in fact they consist of a wide range of forms and types. The most common way to differentiate vegetarians is based on the food items they choose to include in or exclude from their diet – e.g. pesco vegetarians, lacto-ovo vegetarians, vegans, and fruitarians (Table I). As shown in Table II, another classification can be made according to their motivations for becoming vegetarians, which range from self-interest (e.g. health, weight management, sensory rejection, religious obligations and economical considerations) to altruistic reasons (e.g. ethical, environmental and humanitarian reasons) (Barr and Chapman, 2002; Fox and Ward,

Types of vegetarians	Definition
Occasional vegetarians ("flexitarians")	For the most part eat animal-based products, yet choose to balance their diet by increasing their consumption of vegetarian products and/or embracing vegetarian diet for limited periods of time
Semi-vegetarians	Consume animal-based foods, excluding red meat (beef and lamb)
Pesco-vegetarians ("pescetarians")	Avoid eating meat and poultry, but consume fish and other animal-based foods
Lacto-ovo vegetarians	Avoid eating meat, poultry and fish, but consume other animal-based foods including dairy and egg products
Lacto-vegetarians ("lactarians")	Similar to the lacto-ovo type, except do not consume egg products
Ovo-vegetarians ("eggetarians")	Similar to the lacto-ovo type, except do not consume dairy products
Vegans	Avoid the consumption of all foods and ingredients of animal origin, usually including honey and other insect products, as well
Raw vegans	Veganism that embraces "raw foodism", i.e. eat only uncooked and unprocessed plant-based foods
Fruitarianism	Consume only fruits, nuts and seeds, and avoid any animal-based foods, vegetables, and grains

**Source:** Fox and Ward (2008), Ginsberg and Ostrowski (2003) and Shani (2010)

**Table I.**  
Classification of vegetarians based on their dietary habits

Anthropocentric/self-oriented vegetarians	Ecocentric/altruistic-oriented vegetarians
<i>Health concerns.</i> Belief that vegetarian diet is healthier or medical restrictions on the consumption of animal-based food	<i>Ethical reasons.</i> Moral concerns for the treatment of animals in modern industrialized farms
<i>Weight-management.</i> Adoption of vegetarianism to reduce or maintain weight	<i>Environmental views.</i> Opposition to the ecological damages that are caused by the animal-based food industry
<i>Sensory rejection.</i> Feelings of repulsion from the taste, smell or texture of animal-based food	<i>Humanitarian motives.</i> Belief that vegetarianism is a prominent solution to the problem of world famine
<i>Economic reasons.</i> Embracing vegetarianism to save money	
<i>Social concerns.</i> Attempts to resemble famous vegetarian figures, and/or influenced by vegetarian significant others	
<i>Religious faith.</i> Practice of vegetarianism out of religious beliefs that prohibit the consumption of (some) animal-based food	

**Source:** Adapted from Shani and DiPietro (2007)

**Table II.**  
Classification of vegetarians based on their motivations for vegetarian diet

2008; Jabs *et al.*, 1998; Shani and DiPietro, 2007). Whatever the typology base may be, the vegetarian population has emerged as being far more complex and diverse than may initially have been conceived.

Empirical evidence shows that the number of vegetarians has remained fairly stable in the past decade. In several recent national polls, approximately 3 percent of US adults (6-8 million) indicate that they are lacto-ovo vegetarians – that is to say that they never eat meat, poultry, and fish/seafood. About one-third or one-fourth of all vegetarians state that they do not consume any animal products at all (i.e. vegans), including dairy, egg and honey-based products. It should be noted that vegetarianism is more common among women, as well as among young people (Beardsworth and Bryman, 2004; Buzalka, 2009). Additionally, vegetarians were found to be distinguishable from their omnivore counterparts in their personality traits, for example by being more health- and environmentally conscious and having a more liberal and humanistic worldview (Allen *et al.*, 2000; Jabs *et al.*, 1998; Linderman and Sirelius, 2001).

Nonetheless, it should be noted that a considerable number of people who are not “classic” vegetarians are characterized by attempts to reduce their meat consumption and to choose more plant-based options (Held, 2003). These individuals are viewed by some as “occasional vegetarians” or “flexitarians”, as they significantly contribute to the growing recognition of the potential of the vegetarian market. For example, the Vegetarian Resource Group estimates that about 40 percent of US consumers constitute a good market for meatless items, while a 2008 national poll has shown that more than half the population “always”, “often” or “sometimes” order vegetarian meals when eating out, making them potential customers of meatless dishes in restaurants (Stahler, 2008).

#### *Vegetarianism and the restaurant industry*

There has been remarkable response on the part of retail food stores and companies to the growing demand for vegetarian products. Nowadays a large selection of nutritious vegetarian items can be found in many retail food stores, including meat and dairy substitutes such as veggie burgers, tofu steaks, vegan pizzas, and numerous other plant-based products (Kiernan, 2011; Reid and Hackett, 2002). Innova Market Insights tracked more than 400 new meat substitute products that were launched internationally from April 2009 to March 2010 and more than 500 new dairy alternatives than were introduced to the global market during 2009, representing a dramatic upsurge compared to previous years (Sant’Angelo, 2010). The Mintel Group report estimated that the value of the US vegetarian food market has grown from \$646.7 million in 1998 to \$1.6 billion in 2003 (Blake, 2004). In the UK, it was estimated that about £600 million was spent on vegetarian products, in 2009 (Walker, 2010).

Nevertheless, it has been argued that the food service industry has been slower in grasping the rise in the demand for vegetarian items. Although the *Restaurant Hospitality* magazine has recently mentioned the growing appeal of meatless dishes as one of the most important trends, which restaurateurs cannot ignore (Rowe, 2010), in many restaurants it is still difficult to find few if any adequate vegetarian items on the menu. One main reason for this seems to be the common perception of vegetarian food as laborious, dull and uninspiring, as well as the recoiling of many chefs and cooks to

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cater to vegetarians because of the hard work involved in preparing and delivering quality vegetarian meals. As argued by the British celebrity chef Simon Rimmer:

[...] [vegetarians] are so much harder to cook for. Unlike meat, you can't age vegetables to change their flavor. It's tough to get the right balance of flavor and texture in a vegetarian dish (Kühn, 2006, p. 9).

Shani (2010) illustrated the common difficulties that vegetarians are faced with when dining out in non-vegetarian places, including:

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- having a limited and not-creative variety of meatless options (e.g. salads and pastas);
- the lack of knowledge among servers regarding menu items that are suitable for vegetarians;
- no indication in menus regarding vegetarian items or items that can be turned into vegetarian items – for example, by using meat substitutes or excluding animal ingredients; and
- cases in which traces of meat or other animal products are discovered in what was supposed to be a vegetarian dish.

All too often, the end result is that vegetarians are limited in partaking in the dining out experience (Cobe, 2003; Perlik, 2010). The lack of choices in restaurants is highlighted by Kathy Freston, a renowned vegan and health and wellness expert. When reflecting on a previous dining out experience, she reported:

If you don't count the bread I tried not to eat too much of and the olives from my martini, or the little side dish of steamed vegetables, there wasn't much I could call a meal.

This demonstrates the numerous restrictions and recurrent inability of vegans/vegetarians to enjoy a satisfying "legitimate meal" (Freston, 2011).

The general lack of awareness and attentiveness to the needs of vegetarians appears to be a significant shortcoming, especially in times of global economic crisis, which largely affects the food service industry. As argued by Sanson (2010, p. 6), editor-in-chief of the *Restaurant Hospitality* magazine: "competition is brutal, yet restaurants are creating a 'no!' vote when they turn their back on non-meat eaters". It should be stressed that many vegetarians (of all types and forms) frequently dine in mainstream non-vegetarian restaurants, either because of the difficulty to locate strictly vegetarian places in certain areas or because they accompany non-vegetarian people who prefer a meat-based meal. In this regard, Shani and DiPietro (2007, p. 68) stressed that:

[...] as groups of people are deciding on a place to go out to eat, the vegetarians in the group could be the "veto vote" that keeps a group of people from stopping and eating at a certain restaurant. In other words, if some of the people in the car do not feel that there is enough variety on the menu or if there is not a sufficient number of vegetarian entrees, the vegetarians in the car may decide to go someplace else to eat.

Therefore, not catering to the needs of vegetarians may impact negatively on the revenues of restaurants due to the loss of non-vegetarian clients, as well.

Nevertheless, an anecdotal evidence for a certain change in the attitudes of restaurants toward vegetarianism has been noted in the past few years (Holaday,

2010). The growing demand for vegetarian items, as well as the rising appeal of health food, has led – at least to some extent – to an increase in the diversity and quality of meatless options in many restaurants (Yee, 2004). The awareness of the negative environmental impacts of the meat industry, in addition to the growing recognition of the health benefits of plant-based food, has generated the “Meatless Mondays” movement, which encourages people to avoid eating meat on Mondays, thus contributing to the reduction of overall global consumption of meat (Buzalka, 2009; Stokstad, 2010). Several restaurants have embraced this trend and offer, every Monday, a wide variety of vegetarian options to their patrons. Evidently, a growing number of non-vegetarian restaurants recognize the value of the veggie trend and have started offering special meatless menus aimed at vegetarians and non-vegetarians alike (Brandau, 2008; Kühn, 2008).

Nevertheless, these anecdotes cannot serve as a substitute for empirical-based knowledge regarding the attitudes of restaurant operators towards vegetarians and their orientation towards vegetarianism. Consequently, the current study aims at filling this gap in the literature and explores the perspective of restaurant operators at a prominent international tourism destination on a wide variety of issues regarding vegetarianism. The study results are expected to aid in understanding the feasibility of the restaurant sector to successfully cater to the vegetarian segment and gaining additional revenues in a highly competitive business environment.

### **Methodology**

In order to address the objectives of the study, face-to-face structured interviews were conducted among various independent family restaurants located in the metropolitan area of San Juan, Puerto Rico. This data collection method provided a distinct advantage as it enabled the researchers to establish rapport with potential participants and gain their cooperation. This interview style also yield higher response rates in survey research and allows the researcher to clarify ambiguous answers when appropriate (Leedy and Ormrod, 2010). The study applied a systematic sampling technique for selecting the participants. The participating restaurants were selected from a local restaurant online informational database ([www.salpr.com](http://www.salpr.com)). Potential businesses included a total of 580 casual independent restaurants in the San Juan metropolitan area. First, the researchers downloaded the restaurants’ names and randomly arrange them. Then, the researchers selected starting number and interval. The fifth restaurant from the list was used as the starting point, and seven was the constant difference between any two consecutive numbers in the progression.

Four trained research assistants from a large local university approached the restaurants from August 2010 to July 2011 and asked the owners to participate in the survey. The research assistants received training with regards the data types and sources, stakeholders, timing and data collection schedule. In addition, to ensure consistency, all interviewers practiced in a role play situation. Finally, the researchers developed an online database form for data coding, and the interviewer received additional training in data entry. Each potential interviewee was informed about the study and an appointment was coordinated in order to accommodate their work schedule. If the owner was unavailable or unwilling to participate, the manager, some other chief executive or the head chef was asked to complete the questionnaire. Following this process, the representation of one prominent decision maker for each



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restaurant was ensured. Overall, representatives from 92 restaurants or 16 percent of the potential restaurants were included in the study, including owners, managers and chefs/senior cooks.

The survey instrument was composed of three sections. First of all, 21 statements that represent various attitudes and views toward vegetarian food were introduced to the participants, who were required to state their level of agreement or disagreement with each statement on a six-point Likert scale, ranging from 1 (fully disagree) to 6 (fully agree). The researchers chose this type of scale for two reasons: to have an even number of ratings and for having respondents commit to either the positive or negative end of the scale. Since the respondents are key decision makers in the restaurant, their familiarity with the operation suggested that a neutral rating may not be as necessary (Gwinner, 2006).

The statements aimed at representing the wide spectrum of views and opinions regarding vegetarian food, including both positive ones (e.g. “vegetarian food has a high nutritional value”, and “offering vegetarian menu items adds a creative touch and appeal to the menu”) and negative ones (e.g. “vegetarian food is boring and uninspiring,” and “it is difficult to train kitchen staff to prepare vegetarian items”). The statements were derived from an extensive review of both academic and trade literature about vegetarianism and vegetarian food in restaurants, including interviews conducted with chefs and other food service practitioners in Puerto Rico (Baraban and Durocher, 2010; Bowen and Morris, 1995; Draper, 2005; Druce, 2009; Kühn, 2006; Rozin, 2001).

The second section of the questionnaire focused on various aspects of the restaurant operations that relate to vegetarian food, for the purpose of adding insights regarding the restaurant’s approach to vegetarianism and vegetarian food, as well as identifying the challenges/difficulties in dealing with this issue. Specifically, the participants were asked how often their restaurant offered vegetarian breakfast items, vegetarian appetizers and vegetarian entrees, on a six-point Likert scale ranging from 1 (never) to 6 (always). Additionally, the survey included questions regarding the respondents’ level of satisfaction with fundamental issues concerning the attentiveness of their restaurant to the needs of vegetarians, such as the variety of vegetarian items offered in the restaurant and the awareness of servers to the needs of vegetarian clients. The participants were asked to state their level of satisfaction regarding each issue on a five-point Likert scale, ranging from 1 (totally dissatisfied) to 5 (totally satisfied). Furthermore, the participants were asked to indicate the sources of information they use when deciding to add vegetarian items, for example the internet, cookbooks, recommendations by friends and/or customers, and nutritionists. Finally, questions regarding the estimated numbers of customers ordering vegetarian items, as well as their estimated spending behavior were also included.

The last section of the survey contained questions pertaining to the personal background of the respondents, such as their current position in the restaurant, in addition to the number of years they have been filling this position and number of years they have been working in the restaurant industry. The participants were also asked to indicate certain socio-demographic characteristics, such as gender, age, and level of education.

## Findings

### *Participants’ profile*

Of 92 participants in the study, 66 were male and 26 were female, while the average age of the sample was 37.49 (SD = 7.89). With regards to the highest level of education

attained, 66 respondents (71.8 percent) held some academic degree (associate, bachelor or advanced). 23 participants (25.0 percent) were restaurant owners (including those who were owner/manager), 32 (34.8 percent) were restaurant managers, and the remaining 37 (40.2 percent) were chefs or senior cooks at the restaurant. The average number of years of the respondents in their current position was 4.49 (SD = 3.87), and 11.20 years in average in the restaurant industry, in general. As for the cuisine offered, the distribution was: 4 percent Asian, 15 percent Latin, 33 percent International, and 48 percent Puerto Rican.

*Attitudes toward vegetarian food*

A series of statements reflecting various attitudes and views toward vegetarian food appears in Table III. As we can see, the participants expressed a relatively strong

	Mean <sup>a</sup>	SD	Disagree (%)	Agree (%)
Vegetarian food has high nutritional value	5.23	0.88	3	97
Offering vegetarian items adds a creative touch and appeal to the menu	4.52	1.26	27	73
The vegetarian menu items that we offer have high sensory advantages and appeal	4.47	1.07	18	82
Offering vegetarian menu items means a restaurant is more competitive	4.33	1.25	27	73
Many restaurant patrons nowadays ask for more vegetarian items on the menu	4.32	1.19	24	76
Including vegetarian items on the menu is profitable	4.11	1.17	35	65
It is too expensive to obtain high-quality vegetarian ingredients	4.05	1.31	32	68
The availability of vegetarian products for preparation is limited, as many ingredients are seasonal	3.77	1.13	35	65
It is difficult to recruit kitchen staff with adequate skills to prepare vegetarian items	3.58	1.33	49	51
It is difficult to obtain high-quality vegetarian ingredients	3.58	1.27	42	57
It is too expensive to prepare attractive and appetizing vegetarian items	3.52	1.25	49	51
Vegetarian menu items are not as profitable as regular menu items	3.46	1.32	46	53
It is difficult to teach servers about the different types of vegetarians	3.42	1.22	59	41
It is difficult to train servers to understand the dietary needs of vegetarians	3.33	1.34	59	41
Vegetarian food is complicated for storage and preservation	3.32	1.47	61	39
It is difficult to train kitchen staff to prepare vegetarian items	3.23	1.35	59	41
It is difficult to prepare attractive and appetizing vegetarian items	3.04	1.31	63	37
Vendors and purveyors of vegetarian foods are unreliable	2.98	1.39	64	36
It takes too many kitchen staff to make vegetarian items	2.67	1.4	74	26
Vegetarian food is boring and uninspiring	2.5	1.26	82	18
Offering vegetarian food can damage the culinary image of restaurants	2.33	1.31	86	14

**Table III.** General attitudes towards vegetarian food

**Notes:** <sup>a</sup>Six-point Likert scale was used (1 = fully disagree, 2 = mostly disagree, 3 = partially disagree, 4 = partially agree, 5 = mostly agree, 6 = fully agree); “agree” = partially, mostly or fully agree; “disagree” = partially, mostly or fully disagree



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agreement with statements that illustrate the operators' perceptions of vegetarian food in terms of the image or choice, demand, profitability items, service delivery, and implementation. An overwhelming majority of the operators, at least three out of every four, considered vegetarian items as offerings that enhance the image and choices at the restaurant in three different ways. For example, 82 percent demonstrated a certain level of agreement that vegetarian food offered "high sensory advantages and appeal" ( $M = 4.47$ ,  $SD = 1.07$ ).

The respondents also agreed that vegetarian food serves as a tool to create interest on the restaurant menu, as 73 percent of the operators agreed that "vegetarian items adds a creative touch and appeal to the menu" ( $M = 4.52$ ,  $SD = 1.26$ ) and "vegetarian menu items means a restaurant is more competitive" ( $M = 4.33$ ,  $SD = 1.25$ ). Finally, 86 percent disagree that "vegetarian food is boring and uninspiring" ( $M = 2.33$ ,  $SD = 1.31$ ). 86 percent of the respondents disagree that "offering vegetarian food can damage the culinary image of restaurants", which open the possibilities for more vegetarian options in their offerings and an opportunity to expand the theme or image of their restaurants to enhance the experience of current customers and potentially attract new ones. It is important to note, however, that the perceptions from restaurants that specialized in Puerto Rican cuisine ( $n = 44$ ) were different from other types of cuisine in terms of a lower perception regarding the "sensory advantages" ( $\Delta M = -0.651$ ,  $t = -3.04$ ,  $p < 0.01$ ) and considering "vegetarian food is boring and uninspiring" ( $\Delta M = 0.566$ ,  $t = 2.19$ ,  $p < 0.05$ ).

Another interesting view from the operators is regarding the demand and profitability of vegetarian options. 76 percent of the respondents indicated that a possible trend exist for the consumption of vegetarian dishes, as many agreed that "restaurant patrons nowadays ask for more vegetarian items on the menu" ( $M = 4.32$ ,  $SD = 1.19$ ). This trend however might be less prominent in the restaurants offering Puerto Rican cuisine ( $\Delta M = -0.648$ ,  $t = -2.71$ ,  $p < 0.01$ ). On the other hand, the financial prospectus from vegetarian menu items is somewhat mixed. For example, 65 percent indicated that "vegetarian items on the menu is profitable" ( $M = 4.11$ ,  $SD = 1.17$ ) but a lesser number (57 percent) consider them "not as profitable as regular menu items" ( $M = 3.46$ ,  $SD = 1.37$ ). It seems that the inclusion of vegetarian items on the menu result in additional profits to the restaurant by satisfying a niche market that supplements current demand and allows a more inclusive participation. However, restaurants offering Puerto Rican cuisine had different perceptions regarding the profitability and consumption patterns regarding vegetarian items. As they had statistically significant lower level of agreement with regards vegetarian items being "profitable as regular menu items" ( $\Delta M = -0.688$ ,  $t = 2.489$ ,  $p < 0.05$ ) and the "patrons asking for more vegetarian items" ( $\Delta M = -0.648$ ,  $t = -2.708$ ,  $p < 0.01$ ).

The participants expressed a relatively strong disagreement with statements that illustrate some of the traditionally common perceptions and myths regarding vegetarian food, particularly "it is difficult to prepare attractive and appetizing vegetarian items" ( $M = 3.04$ ,  $SD = 1.31$ ), "vendors and purveyors of vegetarian foods are unreliable" ( $M = 2.98$ ,  $SD = 1.39$ ), "it takes too many kitchen staff to make vegetarian items" ( $M = 2.67$ ,  $SD = 1.40$ ), and "vegetarian food is boring and uninspiring" ( $M = 2.50$ ,  $SD = 1.26$ ).

On the other hand, the participants were more pessimistic or skeptical with regards the possible implementation of vegetarian menu items. Close to 60 percent or more of

the respondents agreed that that “the availability of vegetarian products for preparation is limited” ( $M = 3.77$ ,  $SD = 1.13$ ), “It is difficult to obtain high-quality vegetarian ingredients” ( $M = 3.58$ ,  $SD = 1.27$ ), and “it is too expensive to prepare attractive and appetizing vegetarian items” ( $M = 3.52$ ,  $SD = 1.25$ ). The perceptions that vegetarian menu items results in higher costs for the operations was more prominent among restaurants focusing on Puerto Rican cuisine, as they had a higher level of agreement with the later statement about how expensive is to prepare attractive and appetizing items ( $\Delta M = 0.699$ ,  $t = -2.768$ ,  $p < 0.01$ ). Overall, the level of agreement among the respondents was somewhat relatively high over some cardinal themes such as the availability, access, and warehousing of vegetarian ingredients. For example, 68 percent of the respondents agreed that “it is too expensive to obtain high-quality vegetarian ingredients” ( $M = 4.05$ ,  $SD = 1.31$ ). At the same time, respondents had favorable views of the warehousing capabilities and the reliability of vendors, as over 60 percent do not agree that, “vendors and purveyors of vegetarian foods are unreliable” ( $M = 2.98$ ,  $SD = 1.39$ ), and “vegetarian food is complicated for storage and preservation” ( $M = 3.32$ ,  $SD = 1.47$ ). Moreover, no differences were found based on the type of cuisine offered in the previously mentioned items.

In general, the respondents level of agreement regarding the difficulty to recruit staff with “adequate skills to prepare vegetarian items” ( $M = 3.58$ ,  $SD = 1.33$ ) was somewhat split (51 percent agree vs 49 percent disagree). Nevertheless, the respondents were in somewhat disagreement (at least 59 percent of the participants) regarding challenges or difficulties to “teach servers about the different types of vegetarians” ( $M = 3.42$ ,  $SD = 1.22$ ), “train servers to understand the dietary needs of vegetarians” ( $M = 3.33$ ,  $SD = 1.34$ ), and “train kitchen staff to prepare vegetarian items” ( $M = 3.23$ ,  $SD = 1.35$ ). So it seems that, “despite difficulties in finding staff with adequate skills”, restaurant operators can capacitate their staff in terms of service and dietary needs and skills. In these cases no differences were found between restaurants based on their type of cuisine. On the operational side, the respondents showed similar feelings towards staffing and manpower needs. For example, 74 and 63 percent, respectively, disagree that “it is difficult to prepare attractive and appetizing vegetarian items” ( $M = 3.04$ ,  $SD = 1.31$ ) or that “it takes too many kitchen staff to make vegetarian items” ( $M = 2.67$ ,  $SD = 1.4$ ).

Finally, almost all of the respondents (93 percent) acknowledge the nutritional value of vegetarian options. This item was rated the highest among all 21 items ( $M = 5.23$ ,  $SD = 0.88$ ) and the feeling was uniform regardless the type of cuisine offered by the restaurant ( $\Delta M = -0.307$ ,  $t = -1.691$ ,  $p > 0.01$ ).

#### *Restaurants' orientation toward vegetarians*

In addition to their general attitudes toward vegetarian food, the participants were also given a series of questions regarding the characteristics of their restaurants and its practices with regard to vegetarian food. First of all, the respondents estimated that, in general, moderate to low rates of customers ordered vegetarian items ( $M = 2.21$ ,  $SD = 1.25$ ; when 1 – few customers, 5 – many customers). In contrast, it was also indicated that the vegetarian customers were relatively “good” customers, as 69 respondents (75.0 percent) stated that vegetarians spent either “about the same” or more than non-vegetarian customers in their restaurants.

With respect to the availability of vegetarian menu items in the restaurants, nearly 40 percent of the participants stated that their restaurant “very frequently” or “always” offered vegetarian appetizers and vegetarian entrees (38.5 and 41.8 percent, respectively). Nonetheless, 78.0 percent indicated that their restaurant “never” or “very rarely” offered vegetarian breakfast items. In addition, the participants indicated that the most utilized sources of information when developing vegetarian menu items by them were the restaurant’s chef (57.6 percent), the internet (41.3 percent), cookbooks (25.0 percent), reviews in food guides (18.5 percent), nutritionists (14.1 percent) and recommendations by customers (13.0 percent).

Finally, the respondents were asked to specify their level of satisfaction with their restaurant’s orientation toward vegetarian food and attentiveness to the vegetarian clients (Table IV). The participants were for the most part satisfied with the flexibility of their restaurants to address the needs of vegetarians ( $M = 3.77$ ,  $SD = 0.89$ ), when over 50 percent indicated that they were satisfied (i.e. either somewhat or totally satisfied) with this feature. A lesser degree of satisfaction was expressed with regards to the awareness of the restaurant’s servers as to vegetarian needs ( $M = 3.64$ ,  $SD = 0.91$ ) and to the variety of vegetarian items offered on the menu ( $M = 3.48$ ,  $SD = 0.88$ ). Note that in the case of the latter points less than half of the respondents stated that they were satisfied with them. Furthermore, the respondents expressed clear dissatisfaction with the indication on the menu of what could be prepared for vegetarians ( $M = 3.14$ ,  $SD = 1.22$ ), as well as with the marketing strategies used by the restaurant to promote vegetarian items on the menu ( $M = 3.02$ ,  $SD = 1.07$ ).

### Discussion and conclusions

The findings of the current study lead to interesting conclusions with significant implications for both research and practice. On the positive side, it appears that the participants, who include prominent decision makers at restaurants in San Juan, certainly recognize the value of vegetarian food for their restaurants. Overall, the participants were well aware of the high nutritional value of vegetarian food, and expressed high disagreement with some widely-accepted negative assumptions regarding vegetarian food, such as the fact that it is difficult to prepare attractive vegetarian dishes and that vegetarian items are unexciting, with low marketing value (Cobe, 2003; Druce, 2009; Kühn, 2006). These results could be seen as a sign that certain changes are occurring in the attitudes of the restaurant industry toward vegetarian food, at least in the context of the study’s setting in Puerto Rico.

	Mean <sup>a</sup>	SD	Satisfied <sup>b</sup> (%)
Flexibility of the restaurant to cater to the needs of vegetarians	3.77	0.89	53.3
The awareness of servers as to vegetarian needs	3.64	0.91	46.7
The variety of vegetarian items in the restaurant	3.48	0.88	42.4
Proper indication on the menu of what can be prepared for vegetarians	3.14	1.22	34.8
Marketing strategies to promote vegetarian items on the menu	3.02	1.07	29.3

**Notes:** <sup>a</sup>Five-point Likert scale was used (1 = totally dissatisfied; 2 = somewhat dissatisfied; 3 = neither satisfied nor dissatisfied; 4 = somewhat satisfied; 5 = totally satisfied); <sup>b</sup>satisfied = either somewhat or totally satisfied

**Table IV.**  
Level of satisfaction from  
orientation to  
vegetarianism

On the other hand, about half of the participants expressed some vacillation with regards certain views on vegetarian food. This tendency was found regarding cardinal issues such as the profitability of vegetarian food for restaurants, the financial costs of making attractive vegetarian dishes, and the difficulty to recruit staff. Clearly, the immediate implication that emerges from these results is the necessity to better inform decision makers in the restaurant industry regarding the new issues and trends relating to vegetarian food. Being better informed about these issues as well as understanding how to effectively overcome the challenges involved in catering to vegetarian (including occasional-vegetarian) customers is likely to result in better utilizing the vegetarian potential to the fullest. For example, an opportunity exists for operators to get the most out of their offerings by analyzing the menu mix and contribution of vegetarian dishes in order to adjust their marketing and production of vegetarian items.

Moreover, the study also raises some worrying concerns as to the attentiveness of restaurants to the needs of vegetarians. Although the participants expressed a relatively high level of certainty in the ability of their restaurants to be flexible in catering to vegetarians, they were less satisfied with the servers' awareness of the needs of vegetarians and the variety of vegetarian items offered in the restaurants, issues that have been widely discussed in foodservice trade magazines (Holaday, 2010; Perlik, 2010; Sanson, 2010). The most troubling finding, however, was the clear dissatisfaction of the participants with the marketing strategies used to promote vegetarian items on the menu, as well as the absence of clear indications on the menu concerning dishes that could be "converted" into vegetarian dishes. This confirms the criticism of Shani (2010) and Shani and DiPietro (2007), who suggest that one of the serious drawbacks in catering to vegetarians is the lack of a proper menu design that includes specific indications and marking of vegetarian items. Although the respondents indicated that vegetarians did not constitute a high percentage of the restaurants' patrons, it was nevertheless recognized that they were "good" spenders. Consequently, successfully accommodating them is a viable target for the restaurant industry, especially in times of escalating competition and global economic crisis.

Although the majority of the restaurants in this study are in the business of serving tourists and locals, the venue in which food is eaten can affect the perception towards vegetarian food. The significant differences in perception from restaurants that focus on Puerto Rican cuisine results suggest that cultural influences could be determining factors regarding the consumption and preparation of vegetarian menu items. For example, these operators view about vegetarian menu items differs in terms of the attractiveness, cost, and profitability. The findings suggest that an opportunity exists to modernize the Puerto Rican cuisine into a more "vegetarian complaisant" cuisine. Traditionally, Puerto Rican cuisine is deeply rooted not only by the environment but by a sense of ethnic identity. The operator's must understand that although the local cuisine is part of the customers and restaurant cultural identity, it is a dynamic process in which some members might acquire new practices such as nutritional preferences and food choices therefore representing a new society (Sanjur, 1995). Therefore, operators must strive to establish a delicate balance while designing new vegetarian offerings that do not discard elements of the old culture but embraces it is identity with new cultural preferences.

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**Implications and recommendations for practitioners**

The study raised important practical implications for restaurants in San Juan and potentially, for restaurants in other destinations that share the same challenges. Perhaps the most important implication that emerges is the need to educate the decision-makers in restaurants (i.e. owners, managers and chefs) regarding critical issues related to vegetarians and vegetarian food. This task can be executed by foodservice and restaurant associations that aim to assist individual businesses in their operations, as well as by vegetarian organizations that seek to promote the awareness of the needs of vegetarians in the restaurant industry. This can be done through techniques, such as distributing information material, publishing vegetarian recipes and recommendations in trade magazines, as well as holding conferences, meetings, or culinary competitions dedicated to the “veggie” challenge and its potential. Note that many of the participants draw information on vegetarian food from the internet, thus efforts to influence and educate restaurants regarding vegetarianism-related issues should take advantage of this important arena.

More specifically, the results point to some fundamental difficulties that the respondents’ sense regarding vegetarian food. Clearly, most of these issues have fairly simple solutions that need to be brought to the attention of the restaurants’ decision-makers. For example, there is a commonly recognized false perception that preparing vegetarian items must be rather expensive, since it requires creating a whole new menu. Nonetheless, in most cases chefs can easily use the same meat-based recipe and make a vegan version of it by simply replacing the meat with an alternative plant-based protein (Fitzpatrick, 2009). In this regard, when offering both vegetarian and vegan dishes, it would be more economically viable to first create a vegan dish, and then allow the addition of dairy products (e.g. cheese and butter), based on the customers’ request. This way, restaurants can easily accommodate both vegetarian and vegan clients, as vegetarians eat vegan dishes, but vegans do not eat vegetarian dishes that contain dairy and/or egg-based ingredients. Note that even in the case of “classic” vegetarian dishes (e.g. pastas and salads) attempts should be made at creating attractive and imaginative dishes with added value to the menu.

Another issue that was raised in the current study concerns the training of restaurant staff that focuses on catering to the needs of vegetarians. Many respondents do not find it difficult to train or teach servers regarding the dietary needs or different types of vegetarians. Therefore, an opportunity exists to persuade servers to act as “pollsters” and continuously inquire about the customer overall experience, satisfaction, and preferences with the products offered by the restaurant. Indeed, appropriate staff training should include instructions with regard to vegetarian types as well their motivations for becoming vegetarians (Tables I and II), as it is vital to recognize the heterogeneity among the vegetarian population. As noted by the French chef Blanc (2010):

[. . .] various forms of vegetarianism are the norm, and as a good restaurateur it is our duty to adapt and respond to these new needs and to our guests’ rising expectations.

For example, mainstream vegetarians are likely to like meat analogues (e.g. veggie burgers), yet sensory vegetarians are expected to reject this type of courses since they resemble and/or imitate meat. Consequently, in many cases catering to different types of vegetarians requires more flexibility and creativity on the part of the restaurant.

One possible solution for avoiding discomfort and/or misunderstandings between the servers and their vegetarian guests, about the inclusion/exclusion of certain ingredients in the dishes that may or may not be appropriate to the guest's particular diet, is to offer "do it yourself" courses. This way the customer puts together by himself/herself the dishes he/she wishes to eat (Shani and DiPietro, 2007). Employing this technique does not exempt restaurants from proper staff training that will prevent them from giving confusing and ambiguous answers to questions about the appropriateness of certain courses for vegetarians.

Proper indication and promotion of vegetarian items on the menu is also a fundamental element in adequately serving vegetarian customers. Nonetheless, the study's participants indicated that this was one of the weakest aspects regarding their restaurants' orientation toward vegetarians. It should be noted that vegetarian food will not "sell itself", but rather various marketing techniques, such as eye-catching indication of vegetarian items, demonstrations, and sampling should be employed as they attract attention to vegetarian products and encourage their consumption.

Over the years, Puerto Rican diets have become somewhat "Americanized", as 70 percent of available food is imported from the USA (Gans *et al.*, 2002). Therefore, a resurgence of the pride of locally sourced products could further promote the awareness and accessibility of vegetarian foods. Local farmers and purveyors have an opportunity to promote the consumption of "locally grown" vegetables and establish partnerships with local restaurants. Their efforts should be guided towards developing new and inspiring vegetarian recipes that represent "traditional Puerto Rican cuisine". Perhaps this could improve further the operators' view regarding vegetarian items' appeal and desirability, as well as its profitability by preserving the authenticity of Puerto Rican food while nourishing vegetarian friendly customers. Lastly, it can be observed that the competitive position of restaurants that offer Puerto Rican cuisines diminishes because of their difficulties in adjusting and becoming friendlier toward vegetarian patrons.

### **Concluding remarks**

Restaurants that recognize the consumer power of vegetarians, as well as the growing number of occasional-vegetarians and "flexitarians" can gain a competitive edge over other restaurants that are slower at understanding the veggie trend. Restaurants can also utilize their vegetarian-friendly orientation to address other important trends in the foodservice industry such as environmentalism and the growing demand for health and organic food which, in many aspects, are closely related to the veggie trend. Changing the attitudes in the restaurant industry toward vegetarian food is vital in order to transfer vegetarian guests from those who "eat only side dishes" and are forced to stick to "the bread and water option", to customers who can fully enjoy the dining out experience with "legitimate meals".

It should be noted that the study's setting – San Juan – is a distinct destination and therefore the results of the study should be generalized with caution, while other destinations should be investigated in future research. In addition, surveying large restaurant chains, which employ a more complex menu development process than independent restaurants, is essential in order to gain a comprehensive picture of the restaurant sector's orientation towards vegetarianism. Furthermore, future studies should include larger samples of decision makers in restaurants to allow more



sophisticated statistical procedures that can generate further insights. To further advance the understanding of the state of vegetarian food in restaurants, research should focus on quantifying the vegetarian menu choices offered in the different foodservice segments as well as examining which vegetarian items tend to be the most popular among customers. Studies on the economic contributions of vegetarian clients can also shed light on the significance of this often underestimated market segment.

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