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Abstract

Purpose – The purpose of this study is to examine key areas related to the craft brewing industry from the perspective of operators of micro and small craft breweries, and propose a framework based on the resourced-based theory of the firm and the theory of innovation. The areas investigated include participants' perceived strengths of their craft brewery, involvement in innovative practices, opportunities for the craft brewing firm, and potential differences related to these areas based on demographic characteristics of participants and their breweries.

Design/methodology/approach – Given its growing significance and economic contribution, the United States' craft brewery industry was chosen for this study. An online questionnaire was designed to gather data from craft brewery operators across the nation.

Findings – Product and service quality, knowledge, reputation and expertise were revealed as key strengths, while creating new recipes and using social media tools were the most considered ways of innovating. Furthermore, opportunities were perceived through craft beer tourism, increased consumption, and quality improvements. Statistically significant differences emerged, particularly based on production levels, staff numbers, and involvement/no involvement in exports. Various associations between the findings and the adopted theoretical frameworks were revealed.

Originality/value – In terms of originality, the proposed refinement based on the adopted theoretical frameworks and findings facilitates understanding of the significance of resources and innovation, particularly for firms operating in a growing industry. Regarding value, the findings have important implications for the industry, for instance, in the marketing of craft brewing, as well as in the development of new craft brewing products.

Keywords: Micro and small craft breweries, strengths, resource-based theory of the firm, innovation, theory of innovation, opportunities.

Introduction

Craft breweries fall under the category of independently-owned, small breweries that adhere to traditional ingredients and brewing practices (Acitelli, 2013). Throughout the last decades, the craft brewing industry has experienced rapid growth in numerous countries and regions, and often, microbreweries are the driving force (Brewers Association, 2016; Cannatelli, Pedrini, and Grumo, 2015; Fastigi, Esposti, Orazi, and Viganò, 2015; McLaughlin, Reid, and Moore, 2014; Reid, McLaughlin, and Moore, 2014). In the United States, for instance, the number of craft breweries has significantly increased, from 537 in 1994, to over 4,225 in 2015 (Brewers Association, 2016). Within this 21-year period, microbreweries grew from 192 to 2397. Similarly, in the European Union, a substantial increase of microbreweries has been reported. In fact, between 2009 and 2014, microbreweries grew from 51 to 238, 263 to 566, 27 to 314, 242 to 585, and 694 to 1,414 in the Czech Republic, France, Spain, Italy, and the United Kingdom, respectively (Brewers of Europe, 2015). This growth also highlights various implications, in particular for the promotion, marketing, and further development of craft brewing products.

Small craft breweries are also making a significant economic contribution. For example, in 2014, United States small and independent craft breweries, or those producing less than six million barrels yearly, made a contribution of $US 55.7 billion to the nation's economy (Brewers Association, 2016). This amount is calculated from the overall impact of the produced craft beer as it is channelled through a three-tier system comprising breweries, retailers, and wholesalers (Brewers Association, 2016) The industry also generated over 424 thousand jobs; of these, 115 thousand included service staff at brewpubs (Brewers Association, 2016).

To some extent the contemporary literature on craft brewing entrepreneurship has accompanied the developments taking place in this industry. Nevertheless, many knowledge gaps remain, especially concerning small and microbreweries (e.g., Duarte Alonso and Alexander, 2017; Duarte Alonso, Bressan, and Sakellarios, 2016; Murray and Kline, 2015). For instance, Cabras, Canduela and Raeside (2011) acknowledge both the scant research, and also the difficulty of investigating micro and small breweries due to firm diversity, which includes brew pubs and craft beer producers.

Limited research is also obvious concerning micro and small craft breweries' strengths, involvement in innovation, and operators' perceived future opportunities. Only recently has one study addressed these areas among European craft breweries. Indeed, Duarte Alonso et al. (2016) recognised the value of identifying key resources, such as the quality and uniqueness of craft beer products, for firms' long-term sustainability. Similarly, in terms of opportunities, Duarte Alonso et al.' (2016) research revealed the potential for exports and for more consumer demand, and through increasing consumer awareness for craft beer products. However, to date no studies have investigated these entrepreneurial aspects among craft brewer operators across the entire United States.

The fundamental objective of this exploratory study is to contribute to the academic literature in various forms. First, the study fills some of the knowledge gaps on the still under-researched craft brewing industry, investigating this industry from the perspective of micro and small United States craft brewery operators. Second, the study adopts two theoretical frameworks, the resource-based theory of the firm (RBTF) and the theory of innovation (TOI) to study strengths, innovation, and future opportunities in the context of craft brewing firms. In addition, a theoretical refinement emerging from the associations between these frameworks and the findings is proposed. Therefore, the following research questions (RQs) will be addressed:

RQ1: What do craft brewing operators perceive to be their strengths?
RQ2: To what extent are they involved in innovation?
RQ3: What opportunities do they anticipate for their craft brewing firms?

The present study is also concerned with the examination of potentially statistically significant differences between demographic elements of participants (e.g., gender) and their breweries (e.g., volume of production, location in the United States) and the themes above.

Given the rapid development of the craft brewing industry, answering these questions could help determine vital areas for the long-term sustainability of the industry. For instance, examining breweries' main strengths would identify some valuable resources that can maximised and operationalised into quality-based, marketing, and diversification strategies

such as producing new craft brewing styles. In turn, these resources could contribute to craft breweries' competitive advantage.

Similarly, there is value in learning operators' involvement in innovation-related activities, and perceived future opportunities, in this case, among United States craft breweries. First, and in line with Duarte Alonso et al.'s (2016) investigation, this information could have practical implications, particularly in helping identify resources contributing to craft breweries' competitiveness. Second, more knowledge of the above areas could help inform the industry, government bodies, chambers of commerce, and end consumers of new product development, or the amalgamation of craft brewing with other leisure activities.

The adoption of the RBTF (Barney, 1991; Peteraf, 1993), and TOI (Downs and Mohr, 1979) could also enhance understanding of the themes under investigation, namely, RQ1 and RQ3. Various reasons support the adoption of the RBTF and the TOI in the present exploratory study. Essentially, two themes under investigation, strengths and opportunities, are highlighted in the literature (Barney, 1991) as part of an organisation's internal and external analysis, respectively.

Furthermore, strengths and weaknesses represent the resource-based model, while opportunities and threats that of environmental models of competitive advantage (Barney, 1991). The decision to adopt the RBTF is also aligned with contemporary craft brewing research (Duarte Alonso et al., 2016). Similarly, the appropriateness of considering the TOI is based on various reasons. First, there is a fit between the theory and this study's investigation of participants' involvement in innovation (RQ2). Second, and as with the RBTF, employing the TOI is also in accord with recent craft brewery research (e.g., Duarte Alonso, Bressan, and Sakellarios, 2017).

Thus, the following question will also be addressed:

RQ4: To what extent do the RBTF and TOI contribute to a deeper understanding of craft brewing operators'

Strengths?
Innovative implementations?
Opportunities for their craft breweries?

Literature Review

Resources and the RBTF

In referring to research by Caves (1980), Wernerfelt (1984) defines firm resources "as those (tangible and intangible) assets which are tied semipermanently to the firm" (p. 172). Employing skilled staff, a brand name, technological knowledge within the firm, capital, machinery, efficient procedures, or trade contacts are all examples of resources (Wernerfelt, 1984). Resource-based view-related research, an essential part of the foundation of the RBTF, rests on various notions:

Heterogeneity: First, and fundamentally, firms are heterogeneous with regard to internal capabilities and resources (Peteraf, 1993). This notion is also significant in terms of strategic management; indeed, strategic formulation begins with appraisal of organisational resources

and competencies (Andrews, 1971, in Peteraf, 1993). In an industry, heterogeneity may illustrate the existence of superior factors of production that, at the same time, are limited in supply; often, they cannot be expanded, and are not sufficient to address demand (Peteraf, 1993). To some extent, the craft brewing industry fits within the notion of heterogeneity. For example, craft brewers may create or utilise their own recipes, some may source local products, or products not available to other craft breweries elsewhere. In addition, despite the rapidly increasing numbers of craft breweries, market share is still modest compared to that of the larger beer companies (Brewers Association, 2016).

Imperfect mobility: According to Das and Teng (2000), imperfect mobility underscores the difficulty and "…nontrivial costs, of moving certain resources from one firm to another" (p. 40). Imperfect mobility also refers to tradeable resources that are of more value to firms currently using them (Peteraf, 1993). Indeed, the opportunity cost of using these resources "is significantly less than their value to the present employer" (Peteraf, 1993, p. 184). Thus, these resources "remain bound to the firm and available for use in the long run" (Peteraf, 1993, p. 184). Assets that are to be used in combination with others, or assets whose value increases when utilised in conjunction with others are examples of imperfect mobility (Peteraf, 1993).

In the craft brewing industry, imperfect mobility could be illustrated by such resources or assets as equipment, space, and logistical elements of a craft brewery, including proximity of hospitality businesses, distribution channels, or large consumer markets. These resources, combined with others, such the craft brewer's skills, knowledge and expertise in marketing, promotion, event participation/organisation, or established collaborative relationships with local businesses, could add significant value to the firm. At the same time, these represent craft breweries strengths, and can trigger potential future business opportunities. Indeed, participating at events, together with the craft brewer's skills in producing high-quality craft beers could help find new consumers or increase the margin of revenues by selling directly to the public. Furthermore, the space of the craft brewery or existing collaboration with other craft breweries could be helpful in organising a craft beer trail, or earning additional revenues by renting out space to other craft brewers. Thus, in agreement with Das and Teng (2000) the above resources would be very difficult to be 'moved' or transferred from one craft brewery business to another. As a result, it would be difficult for potential competitors to adopt and exploit them in the short or medium term.

Barney (1991) proposes a model illustrating the relationships between firm resource heterogeneity and immobility and four key attributes of firm resources, with important implications for firms' sustained competitive advantage:

Value: Valuable resources enable firms to employ strategies that, together, may help improve effectiveness and efficiency, neutralise threats, and exploit opportunities (Barney, 1991). Moreover, if firms' valuable resources are unique compared to those of competing firms, such resources will at least generate competitive advantage and potentially sustained competitive advantage (Barney, 1991). The process of developing craft beer flavours, or the uniqueness of the process (time, ingredients, skills involved), as well as developing or acquiring craft brewing equipment fit within this attribute.

Rareness: Firms may enjoy competitive advantage if they implement value-creating strategies that are not simultaneously implemented by many other firms (Barney, 1991). Thus, firms' resources should be rare among their potential or current competition; however, if many other

firms conceive or implement similar strategies, these will not be sources of competitive advantage (Barney, 1991). Both valuable and rare resources can be sources of sustained competitive advantage as long as other potentially competing firms do not possess them and cannot acquire them (Barney, 1991). The strategies used by craft brewers to source ingredients of stronger reputation or higher quality, or the structure of their supply and distribution chain represent rareness.

Imperfect imitability: According to Barney's (1991) interpretation of Dierickx and Cool's (1989) research, this attribute is based on three sub-sets:

Unique historical conditions: Firms are intrinsically social or historical entities, and management's ability to exploit or acquire various resources depends on their place in space or time. Importantly, once such unique time in history has passed, those (competing) firms that do not have similar time or space-dependent resources cannot acquire them; as a result, these resources become imperfectly imitable (Barney, 1991).

Causally ambiguous: Causal ambiguity exists when the links between the resources a firm controls and its sustained competitive advantage, which can be interdependent and very complex, are only understood very imperfectly, either by the firm's management, or by competitors (Barney, 1991).

Social complexity: Imperfect imitability can also occur when a firm's resources are influenced by very complex social phenomena, beyond management's ability to influence or manage, and significantly constraining imitability by other firms (Barney, 1991). Barney (1986), for instance, identifies organisational culture as one form of social complexity within a firm.

Substitutability: A further qualifier or requirement to achieve sustained competitive advantage is that firm resources should have no "strategically equivalent substitutes" (Barney, 1991, p. 106). Moreover, as Barney (1991) postulates "there must be no strategically equivalent valuable resources that are themselves either not rare or imitable" (p. 111).

One key contribution of the resource-based model is that it helps explain "long-lived differences in firm profitability that cannot be attributed to differences in industry conditions" (Peteraf, 1993, p. 186). Furthermore, the model could be useful to firms' management seeking to extend, preserve, or understand their organisation's competitive advantage (Peteraf, 1993).

Innovation and the TOI

The term innovation has been defined in a variety of ways. This study adopts Kanter's (1983) conceptualisation of innovation as a process bringing any problem-solving or new idea into use. Ideas may include those related to communication improvements, cutting costs, implementing new budgeting systems, or reorganising (Kanter, 1983). Innovation also means accepting, generating, or implementing new ideas, services, processes, or products (Kanter, 1983).

While several authors have sought or contributed to the development of a TOI (e.g., Lundvall, 1992; Nonaka and Kenney, 1991; Schumpeter, 1934; Sundbo, 1988), this study acknowledges and discusses the seminal work by Downs and Mohr (1979). The authors provide an introductory definition of innovation "as a quantified dimension of behavior" (p. 385). Whereas behaviour underlines 'innovativeness' as a property of those organisations adopting

innovation, behaviour highlights 'adoptability' "as a property of the diffusing idea" (Downs and Mohr, 1979, p. 385). Therefore, when organisations adopt certain new ideas extensively and rapidly, such action suggests that the ideas are adoptable, and that the organisation is very innovative (Downs and Mohr, 1979).

Downs and Mohr (1979) presented several dimensions associated to a TOI, hypothesising that innovation is a function of the following dimensions:

Benefits: Many benefits exist by innovating, at both organisation and individual level; invariably, these benefits are suggested to fall under the following categories:

Programmatic are those benefits of increased efficiency and effectiveness in achieving externally related objectives; in the private sector, such benefits are usually referred to as profits (Downs and Mohr, 1979). In the craft brewing industry, programmatic benefits could be illustrated, for instance, in completing bottling or distribution processes more rapidly.
Prestige, which include approval or recognition attained by organisations and their members by becoming early adopters of new technologies or programs.
Structural, which can be illustrated by improved relationships within an organisation, or higher staff satisfaction (Downs and Mohr, 1979).
Costs are also part of innovation processes, and divided in the following two overarching categories:
Decision, or the costs of making decisions to implement/not implement an innovation, or the extent to which innovation should be implemented. If implemented, two forms of decision costs should be assessed, one for acquiring information, and the second for managerial or technical skill time (Downs and Mohr, 1979).
Implementation, or those costs directly related to the implementation of the innovation, such as manpower, equipment, external or internal social costs. This last type of costs relates to the disruption of the status quo within an organisation, for instance, when the adoption of an innovation may be frowned upon internally (Downs and Mohr, 1979).

Other dimensions related to innovation include:
Resources: As the word suggests, resources are broad and may include wealth, manpower, expertise and time, equipment, information, and staff tolerance for change (Downs and Mohr, 1979).

Discounting factors, which are further divided into the following five:
Risk: The extent of concerns over a potential 'catastrophe' (Downs and Mohr, 1979), or when implementing innovation may entail considerable risks. In the craft brewing industry, risk could occur, for instance, when new equipment to bottle craft beer or to increase production is purchased but the craft brewery operates in a location with inconsistent power supply. Another example could be making considerable investments in products and promotion to launch the craft brewery's only beer brand.
Average cost of discontinuance: The average costs associated with the cancellation of an innovation, that is, between no adoption and fair-trial point. The fair-trial point indicates the degree of use at which adopters of innovation have sufficient experience to determine costs and benefits correctly (Downs and Mohr, 1979).
Uncertainty: When an organisation lacks confidence "in its benefit-cost calculations" (Downs and Mohr, 1979, p. 399). An illustration could be the dilemma for craft brewery operators to consider investments in innovative practices and tools when facing a growth of craft

breweries in a particular area. In this case, uncertainty is also associated to decision benefits above, in that the costs of implementing/not implementing an innovation need to be assessed.
Instability in the future stream of benefits: Concerns of unexpected benefit-cost ratio decreases "beyond the fair-trial point" (Downs and Mohr, 1979, p. 399), for instance, due to equipment obsolescence or depreciation.
Venturesomeness: The propensity or predisposition among decision makers within an organisation to ignore uncertainty or risk. Thus, the example provided under uncertainty also fits in the context of venturesomeness.

Methods

The present exploratory study is concerned with examining perceived strengths, benefits from involvement in innovation, and opportunities in the craft brewing industry, adopting the RBTF and the TOI as theoretical frameworks. To examine these areas, the perceptions of predominantly micro and small United States craft brewery operators, including owners and managers are gathered. Potential statistically significant differences between the areas under investigation and demographic characteristics of participants and their breweries are also investigated. Thus, the study contributes to various streams of academic literature, including craft brewing and micro and small business entrepreneurship.

According to Saunders, Lewis and Thornhill (2016), an exploratory study is one "that aims to seek new insights into phenomena, to ask questions, and to assess the phenomena in a new light" (p. 716). The exploratory nature of the present study is also aligned with contemporary family business and small and medium enterprise research. Dekker et al. (2012), for instance, conducted an exploratory study to ascertain various dimensions of family firms. In the process of developing their survey, the authors recognised that "…the literature does not provide any profound scale instruments" (p. 82). Consequently, the authors created own scales; they explained that the resulting developed variables were "based on professionalization characteristics discussed in previous studies" (p. 85). Another exploratory study (Tanco, Jurburg, and Escuder, 2015) investigated managers' perceptions concerning the most important challenges of establishing supply chains. Similar to Dekker et al.'s (2012) approach, Tanco et al. (2015) employed a survey using Likert-type scales that were partly based on a literature review.

The growing significance of the craft brewing industry in the United States, including its important economic contribution (Brewers Association, 2016), is a fundamental reason for choosing this country. Importantly, and aligned with exploratory research (e.g., Saunders et al., 2015), the study sought to assess the phenomenon of craft brewing in the United States from a different perspective or 'new light'.

Given the limitations in terms of distance, time difference, and budgetary demands to conduct face-to-face or telephone interviews and gather data nationwide, a decision was made to collect craft brewery data through an online questionnaire. This approach is in accord with earlier research (Parvin, Wang, and Uddin, 2017) suggesting the usefulness of online questionnaires in reducing costs and in saving time. Furthermore, in agreement with contemporary research (Dekker et al., 2012; Duarte Alonso et al., 2016, 2017; Tanco et al., 2015), a quantitative data collection approach was chosen. While this approach is not free of constraints, particularly modest response rates, it offers speed and cost advantages as compared to paper-based questionnaires (Sauermann and Roach, 2013). Not surprisingly,

online questionnaires have been used in wine consumer (Bruwer and Johnson, 2010), and, more recently, in craft brewing research (Duarte Alonso et al., 2016).

To examine the various themes of this study's RQs, the online questionnaire featured various sections. Section one gathered demographic information of craft brewery operators and their brewery. Section two investigated participants' perceived strengths based on a list of Likert-type scaled items, with the scale ranging between 1= Strongly disagree, 2= Disagree, 3= Neither agree nor disagree, 4= Agree, and 5= Strongly agree (Table 2). Likert-type scaled items with the same levels of agreement/disagreement were also part of sections three and four. These sections studied operators' involvement in innovative practices (Table 3), and perceived future opportunities in the craft brewing industry (Table 4), respectively.

When designing sections two and four, contemporary craft brewing research (Duarte Alonso, 2011; Hede and Watne, 2013; McGrath and O'Toole, 2013, 2014; Reid et al., 2014) was consulted. The approach of reviewing pertinent literature to design questionnaire scales in exploratory research is also in accord with Dekker et al. (2015) and Tanco et al. (2015). Regarding section three, due to the absence of craft brewery research addressing innovation, the wine entrepreneurship literature was considered instead (Aylward, 2003; Aylward, Glynn, and Gibson, 2006; Aylward and Turpin, 2003; Rebelo and Muhr, 2012; Touzard, 2010). Aligned with other studies using online questionnaires (Duarte Alonso et al., 2016; Mason et al., 2013), space was also provided at the end of these three sections to gather participants' typed comments.

A nationwide search of craft brewery contact details was carried out. This search included inspection of websites from individual craft brewery businesses, websites representing regional craft brewery groups and associations, and those providing state-based listings of craft breweries. Overall, the email addresses of 1,772 craft breweries were identified; subsequently, contact was established in June of 2015. The message sent to the attention of owners, managers, and craft brewing masters presented the overall aims of the study, and asked the recipients to follow a link provided in the body of the message to complete the online questionnaire.

Following this first message, 76 automatic responses indicating delivery failure were received; these contact details were deleted and no longer considered. Over the course of the following weeks, three reminders were sent to the remaining 1,696 email addresses. As many as 221 usable questionnaires were obtained, a 13.0 percent response rate. This percentage, while modest, is similar to or even higher than percentages of previous craft brewery, winery, and wine consumer studies conducted in the United States employing online questionnaires. First, research among United States' craft breweries (Patterson, Hoalst-Pullen, and Pierson, 2016) gathered 303 usable response from 2,822 firms contacted, representing a 10.7 percent response rate. A second study among California wineries (Cholette, 2010) attained an almost equal response rate (10.5%), gathering 142 responses from 1,356 businesses. A third study (Bruwer and Johnson, 2010) investigating United States wine consumers collected 570 responses from 9,922 messages sent, a 5.7 percent response rate. To overcome low response rates utilising an online questionnaire, some authors have sought the assistance from their professional networks. Such is the case of Bo Liu et al.'s (2014) study, where the authors were able to build snowball sampling.

The predominantly quantitative data were exported into SPSS, version 20. Wherever applicable, independent samples t-test, one-way analysis of variance (ANOVA, Scheffé post hoc), and Pearson's Chi-square were used to test any statistically significant differences between the scaled items provided in the questionnaire (Table 2, 3, and 4) and demographic characteristics of craft breweries and respondents (Table 1). Participants' typed comments provided in the next sections will be identified by letters and numbers, for instance, Participant 1= P1, and Participant 2= P2.

Characteristics of participants and breweries

Participants' responses indicated that almost two-thirds were owners of the breweries (Table 1). Based on volume of yearly production, all breweries can be considered small craft breweries, or those producing less than six million barrels annually (Brewers Association, 2016). This information is further supported by the number of employees of the craft breweries, with 70.2 percent employing fewer than 20 staff. However, closer analysis revealed that at least 85 percent fall under the category of microbreweries, or those producing less than 15,000 barrels per year (Barlow, Verhaal, and Hoskins, 2016). The recent establishment of the firms also became apparent, with 61.1 percent of participants indicating that they had opened in the last three years, and 81.9 percent in the last decade. Further, the male group was clearly the more predominant, while of the four geographic regions, breweries located in the West of the United States represented 40 percent of participants. The links between the brewery and direct sales to end consumers also emerged, in that 95 percent of breweries were open to the public. Finally, while modest, nearly 15 percent of craft breweries were exporting their products beyond their state borders.

Table 1 Here

Results

RQ1: Main perceived strengths and inter-group differences

The online questionnaire presented a list of items associated with the strengths of the craft brewery (Table 2). Of the 11 items, nine were ranked either above or close to the level of agreement (mean=4.00 or 'Agree'). Fundamentally, participants felt most strongly with the strength related to the quality of the beer product; this perception was supported by knowledge of the brewing process (mean=4.48). This finding is supported by recent research conducted among craft breweries from three European nations (Duarte Alonso et al., 2016). The fact that almost all participating craft breweries were open to the public appeared to have evident links with service quality. Indeed, participants also clearly agreed with this aspect as being one of their strengths (mean=4.45). Earlier research conducted in the pub industry (Knowles and Egan, 2001) also identifies the associations between service provision and beer sales.

Other items related to both product and service quality emerged as significant, including the reputation of the craft beer product, expertise in brewing, and variety of craft beer products. In contrast, participants were neutral (Mean= 3) with the notion of producing at a low cost; P1's comment further reinforced this finding, explaining: *"Nothing is "low cost" in a brewery operation"*, while other comments illustrated a variety of perceived strengths:

> P2: *Our product is of the finest quality. I am a formally trained master brewer from Bavaria, having done both the traditional apprenticeship, work as a journeyman, and study at the Technical University of Munich.*

> P3: *Our biggest strength aside from quality is our connection to and creation of community around our product and our town. This leads to knock on marketing effects, especially in a large tourist destination.*

Part of these comments are also associated with research by Clemons, Gao, and Hitt (2006). These authors explained that, whereas "offering a better-quality product is always beneficial" (p. 166), being first choice for members of a key segment, rather than a suitable substitute for numerous consumers, may be even more important for craft brewers. Additional perceived strengths also appeared to overlap into innovation and ways of innovating:

> P4: *One of our largest personnel investments, aside from production/packaging, has been in our microbiology lab/quality control lab. Although our brewery is just under three years old, this investment allows us to produce consistent, mature tasting beer.*
> P5: *We are a small microbrewery, but have moved onto distributing our beer (somewhat uncommon to brewpubs and microbreweries). However, due to limited space and size of [the] brew system, we are not able to produce and package beer at a very efficient cost.*

An internal reliability test conducted for the items pertaining to perceived strengths produced a Cronbach's Alpha of .813, supporting further statistical analyses (Table 2). Various statistically significant differences emerged. Using one-way ANOVA (Scheffé post hoc), it was noticed that participants from craft breweries producing most barrels agreed more with branding being a strength than those producing between 840 and 4193, between 336 and 839, and 335 barrels or less. Similarly, participants representing craft breweries with the largest production agreed more concerning the consistency of the craft beer product than those producing between 336 and 839, and 335 barrels or less. These findings underline that, the larger the production, the more importance craft brewery operators place on aspects that may influence and affect consumers' perceptions, such as branding, or consistency of the craft beer products.

Table 2 Here

Analysis conducted using independent samples t-test also identified differences based on the size of the brewery (number of staff) and whether the breweries exported or not (Table 2). Participants from the larger craft breweries (10 staff or more) agreed more with 'branding', 'consistency of product', and 'flexibility of production' than did operators from craft breweries employing nine or fewer staff. Clear differences were also noticed between exporters and non-exporters and perceived strengths (Table 2), with members of the first group clearly agreeing more. The fact that exporters agreed more also demonstrates a stronger awareness among members of this group, as well as the need to address the respective areas (expertise, variety, branding) in order to satisfy the demands of importers/consumers. This last point is particularly significant with regards to end consumers, who, according to Drewniak and Karaszewski (2016) increasingly have stronger expectations to engage with brands, and even aspire to influence their image.

RQ2 Involvement in innovation; inter-group differences

Overall, participants' involvement in innovative practices appeared to be moderate (Table 3). Only creating new beer recipes, followed by involvement in social media were either slightly

above, or close to the level of agreement (mean=4.00). While there is limited research studying innovative practices through the development of new craft beer recipes, contemporary wine business research highlights the potential benefits of social media. For instance, Capitello et al. (2014) found that winery management's creativity in terms of technology, style, and use of communication through social media could be factors facilitating brand visibility. In addition, social media could be useful in creating consumer loyalty, and in engaging customers, with implications for wineries' competitive advantage (Capitello et al., 2014).

At the other end, improvements in the label of the beer bottles was clearly less considered as a way of innovating. Comments underlining canning beer and reintroduction of traditional beer styles underscored alternative forms of innovation:

> P5: *We have not necessarily expanded by buying equipment - but with the availability of a mobile canning company in the area, we are able to move from bottles to cans and package our beer for retail at a more efficient cost.*
> P6: *We are innovators in packaging in the sense that we were the first canning craft brewery in Ohio.*
> P7: *We brew traditional Bavarian beers as they were brewed years ago, i.e. with full original gravity and bitterness units. Not watered down like the German breweries do today.*

An internal analysis conducted for the items in Table 4 identified a Cronbach's Alpha of .831. Subsequent tests (one-way ANOVA Scheffé post hoc) revealed that, once again, participants whose craft breweries produced more beer agreed significantly more than those representing the smaller firms. Such was the case concerning innovation through the purchase of both light/medium and heavier equipment, and with regard to improvements in the label of the beer bottles. While this item scored a low mean (2.78), the group producing more craft beer considered this item as a way of innovating much more than did participants whose breweries produced less. One possible explanation is that, with higher production, operators from these breweries may seek different marketing avenues, including exports, and different consumer markets that may expect or demand creative and informative labels in the beer bottles.

Further analysis was conducted to test whether a relationship existed or not between breweries producing more craft beer or employing more staff and exports. In the first case, only three (2.8%) participants whose breweries produced 839 barrels per year or less were involved in exports. In contrast, participants from the other 27 craft breweries (24.1%) producing between 840 and 335,457 barrels indicated such involvement. In the second case, whereas 10 (7.3%) of those employing nine or less people were involved in exports, such involvement increased to 20 (23.8%) among those firms employing 10 or more staff. Running Pearson's Chi-square test, this last relationship was shown as statistically significant (χ^2 (1, n=221) = 12.099, ($p<0.001$)). Hence, the relationships between quantity produced, number of employees and exports were confirmed.

Table 3 Here

A statistically significant difference was also noticed based on the region where craft breweries were located, with participants from the Mid-West clearly agreeing more with increased involvement in beer or culinary tourism activities than did those from the West.

Running independent samples t-test, various differences in perceptions from participants representing breweries of different sizes (nine or fewer staff versus 10 or more), and exporting versus non-exporting breweries were revealed. In all cases, participants from breweries employing more staff and exporting agreed more than their counterparts. Similar to the case of differences between levels of production, an argument could be made that craft breweries employing more staff, and those exporting may have strong motivations to innovate in various ways. As illustrated (Table 3), purchasing new equipment, and designing specific labels for the craft beer, for instance, were common innovating initiatives between these two groups.

RQ3: Perceived future opportunities and inter-group differences

Participants were also queried about potential business opportunities for their firms, and presented with nine different items to indicate their level of agreement (Table 4). The potential of craft beer tourism, followed by the trend in popularity of craft beer consumption were clearly the most perceived opportunities. Participants also agreed with improving the quality of the craft beer and educating consumers, two key areas that may result in more consumer awareness, more acceptance and consumption. Not surprisingly, their agreement with the potential to expand brand value or recognition was also apparent. While under the level of agreement (mean=3.74), the potential for exports was somewhat considered, even when at the time of the study only 30 of the craft breweries were exporting. The findings of the perceived potential for exports and the benefit from stronger brand or product recognition are also partly in line with Duarte Alonso et al.'s (2016) comparative study of craft breweries from three European nations. The following selected comments further underlined some of the opportunities and requirements to exploit these opportunities:

> P8: *Alcohol tourism is a major growth industry in our locale. Within 30 miles there are 8 breweries, 50 wineries, a meadery, 3 cideries, and 2 distilleries. We all support each other.*
> P9: *Niche products like beer cocktails are going to be big in the next few years.*
> P10: *We have enormous growth potential in a lot of markets but it takes time and great beer to get there.*
> P11: *I think [there are opportunities in] education on beer. I noticed this when I was in Portland. People there understand beer and it is a part of their culture. Once you [consumers] understand and know the various breweries, we will get a significant part of the beer market.*

Table 4 Here

When testing the internal reliability of the items in Table 4, a Cronbach's Alpha of .775 was confirmed; subsequent analyses identified some statistically significant differences. As compared to participants from craft breweries producing 335 barrels or less, those whose breweries produce between 840 and 4193 barrels agreed more with opportunities through improved product quality. Also, respondents from craft breweries established in the last 10 years agreed significantly more with the potential for canned, kegged, or bottled craft beer than did those who had been in the industry for a longer period of time. This finding suggests that the newer entrants may be more active monitoring and identifying new trends and changes in the consumer/retail market, as well as being more open to consider these trends.

Finally, participants who were exporting their craft beer products to other states or countries perceived the future potential for exports more strongly than did participants who were not exporting. Clearly, because of the experience of the group of 30 exporters in conducting business beyond their state borders, this finding is not surprising. However, it suggests that such experience may have been positive, and therefore, the group of exporters may perceive further opportunities in venturing into already established or new markets.

Discussion

RQ4: How the RBTF and the TOI contribute to the understanding of the study's themes

A number of links between the findings and the adopted theories were confirmed; these links are conceptualised in a proposed theoretical refinement (Figure 1). Concerning the RBTF, the relevance of heterogeneity and superior factors of production in the context of craft breweries became obvious, for instance, through the apparent focus on quality of product and service, which was identified as key strengths (Table 2). Superior factors of production were also illustrated in innovative practices, particularly in the development of new craft beer recipes. The focus on product and service quality also overlaps with another 'theoretical condition' (Peteraf, 1993), that of 'imperfect mobility', and complements other perceived strengths, including operators' knowledge of the brewing process, reputation, expertise, and product variety.

Figure 1 Here

Given that the vast majority of participants indicated that their breweries were open to the public, and given the strong competition, with literally thousands of existing craft breweries, these strengths and innovative practices could help strengthen firms' prospects of achieving competitive advantage. The associations between both theoretical conditions and some of the craft brewery resources are discussed in the next sections:

Valuable: Several key elements that apply in the context of imperfect mobility, such as expertise and knowledge of the brewing process, as well as consistency of the craft beer products and continuous innovation of the brewery (Table 2) are at the same time indicators of valuable resources. Together, and in line with Barney (1991), these resources may increase efficiency and/or effectiveness.

Rare: The essential elements highlighted under valuable resources, coupled with craft breweries' uniqueness, particularly concerning their niche market focus, artisan, and small batch production, could be utilised in the implementation of value-creating strategies. Importantly, these elements may not be easily replicable by many other craft brewery firms.

Imperfect imitability: The time in which various resources of craft breweries were acquired and developed, including expertise, knowledge, marketing and production strategies, are dependable on time, and therefore may be difficult for other craft brewery firms to imitate or obtain. Again, the niche market focus, limited production, and more artisan craft brewing process, where operators may develop new recipes that are arguably distinctive from those of other firms, or from mainstream craft beer production, provide elements of differentiation and potentially competitive advantage. Production processes, for instance, may be taken to different levels that, although understood by other craft brewer operators, may nevertheless be complex to copy or implement fully. In addition, through operators' contacts, knowledge, and expertise, these production processes or new product development may have contributed to

the establishment of new markets in the past. Operators' entrepreneurial ways may therefore be linked to the craft brewery's business culture, and may be difficult to imitate or implement. Thus, *causal ambiguity and social complexity* also appear to fit in the context of the findings.

Substitutability: Arguably, there are forms in which craft breweries may be able to imitate each other, including by substituting or acquiring a similar resource to implement identical strategies. Among other forms, hiring a brewing master, buying similar equipment, or trying existing recipes may create an element of substitutability, significantly limiting the potential of achieving competitive advantage. However, craft brewery operators may find ways to avoid complete substitutability, focusing on improved product/service quality, or, as previously suggested, opening new niche markets. Moreover, maintaining the consistency of the product/service quality, and aiming at creating new flavours and styles represent ways of limiting the potential for substitutability. In the case of craft brewers located in the same region or town, there may also be a genuine interest in product differentiation in order to offer consumers with various experiential alternatives that are not replicated by their competitors.

Various links between the categories related to the TOI, as postulated by Downs and Mohr (1979), and the study's findings also became apparent. In relation to *programmatic benefits*, and as suggested by Barney (1991) concerning valuable resources, efficiency and effectiveness from innovative practices may allow breweries to be consistent in production, as well as in quality. These key strengths may also have implications for external objectives (Downs and Mohr, 1979), including opening new markets, increasing sales/revenues, and also in terms of *prestige benefits*, with potential recognition by consumers, distributors, or by the hospitality industry. Structural benefits may also be an outcome of innovative practices. Moreover, improved efficiency and effectiveness, consistent product/service quality, and resulting prestige benefits could contribute to enhanced relationships within the craft brewery, including between the ownership and members of staff.

Inevitably, innovation initiatives would result in various costs for craft brewery operators. *Decision costs* are illustrated in the process of information gathering, for instance, information of new craft beer consumer markets, or new product development, and related opportunity costs. Purchasing new equipment, the 'social costs', in the form of increased concerns to deliver on product expectations, or the amount required to innovate, highlight some of the *implementation costs* (Downs and Mohr, 1979). Similarly, innovation would also entail investment in a variety of *resources* for craft breweries, especially in the form of developing or acquiring equipment, expertise, and information.

Various *discounting factors*, including *risk, average cost of discontinuance, and instability in the future stream of benefits*, while not explicit in participants' responses, are implicitly associated with the study's findings. Indeed, apart from financial investments, experimenting with new recipes or equipment could be risky, in that the desired outcomes of objectives may not be achieved, potentially creating disappointment among consumers, or even damaging the brewery's brand. Cancellation of innovative practices, such as discontinuing involvement in social media, or no longer considering a certain technology or equipment may not only trigger financial and opportunity costs, but also costs related to losses in efficiencies and reputation.

Together, the associations between the findings and the theoretical frameworks identify a number of implications (Figure 1), which, in the context of the study, are also manifested in participants' perceived opportunities.

Conclusions

The main objective of this exploratory research was to contribute to the extant literature on craft brewing entrepreneurship, and micro and small businesses. In doing so, the study examined craft brewery operators' perceived strengths, their level of involvement in innovative practices, and perceived opportunities for their craft brewing firms. The study also investigated potential statistically significant differences between demographic characteristics of breweries and participants, and items related to the themes under investigation. Finally, the study adopted the RBTF and the TOI, thus, also contributing to the literature, by adopting these theoretical frameworks in the context of the burgeoning craft brewing industry.

The findings highlight participants' awareness and focus on key resources of their breweries, particularly product and service quality, knowledge of craft brewing processes, reputation and expertise. Creating new recipes and social media involvement were perceived as main forms of innovating, while main perceived businesses opportunities were based on the development of craft beer tourism, the current growth of the industry, and improvements in product quality. Statistically significant differences predominantly highlighted stronger agreement among participants representing the larger breweries, particularly with regard to branding and product consistency (strengths), investments in new equipment (innovation), and potential for exports and through improved craft beer quality (opportunities).

Overall, various alignments were recognised between the findings and the two adopted theoretical frameworks. Regarding the RBTF (Barney, 1991; Peteraf, 1993; Wernerfelt, 1984), participants' highlighted focus on craft beer quality, as well as innovation through new craft beer recipes, align with the notion of heterogeneity, while knowledge, the recognised strengths in product/service quality reputation, and expertise fit in the context of imperfect mobility. Together, these elements also overlap into various key resources, such as valuable, rare, imperfectly imitable and unsubstitutable, thus suggesting breweries' path to competitive, or sustainable competitive advantage. Concerning the TOI (Downs and Mohr, 1979), the different forms of innovation suggest clear benefits (programmatic, prestige, structural), costs (decision, implementation), and correspondingly, demands in terms of resources. Further, while various forms of innovation may result in important benefits enhancing breweries' competitive advantage, for instance, such as new recipe development or acquiring new equipment, there are also potential risks, and a certain degree of uncertainty concerning the actual outcomes of innovative practices.

Implications

The findings highlighting operators' perceived strengths, ways of innovating and opportunities in the context of the United Sates, where a burgeoning and vibrant craft brewing industry is developing, provide valuable preliminary insights. One practical implication is that knowledge of these areas could be useful for new entrants, operators in other emerging industries, including cider and Perry producers, or those in established industries, such as the wine industry. For instance, awareness of product/service quality, knowledge and expertise, or product variety emphasise key areas for operators to achieve a certain degree of heterogeneity and imperfect mobility thus, maximising the potential for competitive advantage.

Perceived ways of innovating also underline the importance for marketing craft brewing products, namely, through new recipe development, or involvement in social media to

advertise, market, and 'sell' craft breweries to consumers. Therefore, these areas could be considered by the craft brewing and by other nascent or already established industries. Finally, the perceived opportunities, where craft brewing tourism clearly stands out, could help inform the industry of the need to design or develop leisure activities around craft beer consumption, including through the involvement of food producers, the hospitality industry, or event managers. Again, these activities could strengthen the marketing, promotion, and future acceptance and patronage among consumers.

From a theoretical perspective, the findings not only suggest the value of studying the craft brewing industry through the lens of the adopted theoretical frameworks, but also the potential for further theoretical development in the context of craft brewing or other emerging industries. For example, the means indicating agreement with service/product quality, knowledge of production processes, reputation, expertise, product variety, and consistency of the craft beer products point at key elements. These elements include the need for constant focus on originality, revisiting production practices, and, in view of the competitive nature of the industry, even consideration of the 'wow' factor to keep the brand image alive in consumers' minds.

The very rapid growth and evolution of the craft brewing industry, with the potential for saturation and brand confusion, suggests that heterogeneity and imperfect mobility, and potentially sustained competitive advantage, are dependent upon craft brewery operators' ability to reinvent themselves in order to maintain consumers' attention alive. Thus, renewal and 'reinvention' of capabilities is a suggested additional attribute to be considered to study the craft brewery industry- or other industries experiencing rapid growth through the RBTF. Similarly, in the context of the TOI, the development of new recipes, and the need to connect with consumers, distributors, suppliers and other stakeholder groups may help keep the brand image and name alive. These efforts once again suggest the importance of constant renewal and reinvention, with subsequent benefits and costs, and impacts on firms' competitive advantage.

Limitations and Future Research

The study only gathered the perceptions of operators of 221 craft brewery businesses. Given that at the time of the study over 4,000 craft breweries were operating in the United States (Brewers Association, 2016), this number of participants is modest. Also, the study predominantly gathered responses from micro and small craft brewery operators, with larger breweries being absent from the research. In view of these limitations, the findings are not generalizable to the entire craft brewing industry of this nation. However, given the exploratory nature of the study, the findings provide first-hand insights of this industry. These findings could be valuable in illustrating strengths, ways and extent of innovating, and perceived opportunities. Together, the findings based on these themes also provide groundwork upon which future research studies could be developed. Some of the limitations of this research could also be addressed in future studies, for instance, employing various approaches, including mail questionnaires or face-to-face and telephone interviews, to achieve higher response rates.

Future studies could also seek to complement the data collection by gathering the perspectives of craft brewery operators operating in neighbouring nations; this approach might allow for potentially useful country-comparisons. Given the existing trade between the United States and these neighbouring nations, knowledge of the emerging craft brewery industries could be

useful, for instance, for craft brewery operators considering exports, and also for consumers interested in experiencing craft beer products from other countries. Finally, future explorations could test the validity and usefulness of the proposed framework (Figure 1). Similarly, researchers could attempt additional refinements, or consider alternative theoretical frameworks in combination with the RBTF and the TOI to study craft brewing firms. Doing so will produce invaluable knowledge and more in-depth understanding of the growing craft brewing industry from a theoretical perspective.

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Table 1: Demographic characteristics: participants and breweries

Characteristics		
Role of the participant (indicating more than one role was possible)	**n**	**%**
Brewery owner	146	66.1
Brewing master/brewer	47	21.3
Brewery's director	30	13.6
Employee (other than the brewing master)	24	10.9
Shareholder	11	5.0
Business partner	10	4.5
Production per year		
335 barrels or less (approximately 39,312) litres	51	23.1
Between 336 and 839 barrels (39,428.8 and 98,455 litres)	58	26.2
Between 840 and 4193 barrels (98,572.1 and 485,702 litres)	79	35.7
Between 4194 and 335,457 barrels (492,516.5 and 39,365,130 litres)	33	14.9
Number of employees		
No employees	16	7.2
Between 1-9	121	54.8
Between 10-19	34	15.4
Between 20-49	29	13.1
50 or more	21	9.5
Age of the craft brewery		
Less than 3 years	135	61.1
Between 3-10 years	46	20.8
Between 11-20 years	29	13.1
Between 21-30 years	11	5.0
31 years or more	0	0.0
Respondents' gender		
Male	181	81.9
Female	40	18.1
Region where brewery is located		
West	90	40.7
South	54	24.4
Mid-West	45	20.4
North-East	32	14.5
Involved in exports		
Yes	30	13.6
No	191	86.4
Open to the public		
Yes	210	95.0
No	11	5.0

Table 2: Main perceived strenghts of the craft brewing business

Perceived strengths	n	Mean	STD.
Quality of the beer product	214	4.80	0.476
Knowledge of the brewing process (my own, that of other people working at the brewery)	214	4.48	0.633
Quality of the service (during/after sales)	214	4.45	0.668
The reputation of the beer (my own, that of the region/state where the brewery is located)	214	4.36	0.722
Expertise in brewing (my own, that of other people working at the brewery)	214	4.34	0.762
Variety of the product (e.g., range of craft beers)	214	4.32	0.788
Consistency of the craft beer products (e.g., consistent quality, taste)	214	4.13	0.821
Branding (e.g., brand strength)	214	3.96	1.018
Continuous innovation of the brewery (e.g., investments in equipment, techonologies, social media)	214	3.88	1.000
Flexibility in production (e.g., proposing new styles, increasing/decreasing production)	214	3.41	1.034
Ability to produce at low cost	214	3.00	1.032

Items	Group*	n	Mean	STD	SIG.
Branding (e.g., brand strength)	1	51	3.76	1.012	0.001(1,4)
	2	58	3.76	.997	0.001(2,4)
	3	79	4.00	1.025	0.021(3,4)
	4	33	4.64	.699	0.001(4,1) 0.001(4,2) 0.021(4,3)
Consistency of the craft beer products	1	51	3.90	.855	0.001(1,4)
	2	58	3.98	.783	0.005(2,4)
	3	79	4.19	.818	
	4	33	4.61	.556	0.001(4,1) 0.005(4,2)

Item	Group	n	Mean	STD	SIG.
Branding (e.g., brand strength)	Staff: 0-9	137	3.86	1.030	
	Staff: 10+	84	4.17	.955	0.029
Consistency of the craft beer products	Staff: 0-9	137	4.04	.830	
	Staff: 10+	84	4.27	.766	0.041
Flexibility in production (e.g., proposing new styles, increasing/decreasing production)	Staff: 0-9	136	3.29	1.041	
	Staff: 10+	83	3.60	.999	0.032
Expertise in brewing (my own, that of other people working at the brewery)	Exports	30	4.57	.568	0.021
	No exports	190	4.28	.786	
Variety of the product (e.g., range of craft beers)	Exports	30	4.67	.547	0.001
	No exports	191	4.26	.804	
Branding (e.g., brand strength)	Exports	30	4.47	.900	0.004
	No exports	191	3.90	1.008	

* 1= 335 barrels or less, 2= 336-839 barrels, 3= 840-4193 barrels, 4= 4194-335,457 barrels.

Table 3: Perceived ways in which the craft brewing business is innovating

Innovation-related activities	n	Mean	STD.
Creating new beer recipes	217	4.04	0.889
Using social media (e.g., Facebook, Twitter, Instagram)	217	3.78	.9760
More involvement in beer/culinary tourism activities	217	3.33	1.054
Developing new working processes	217	3.33	1.079
Buying new equipment for the brewery (light/medium size)	217	3.27	1.112
Buying new machines (heavier)	217	3.18	1.265
Developing new production techniques	217	3.18	1.149
Improvements in the label of the beer bottles (e.g., more information, including in different languages, different design)	217	2.78	1.343

Items	Group*	n	Mean	STD	SIG.
Buying new equipment for the brewery (light/medium size)	1	51	3.12	1.177	0.014(1,4)
	2	57	3.00	0.964	0.002(2,4)
	3	78	3.31	1.166	
	4	33	3.91	0.843	0.014(4,1) 0.002(4,2)
Buying new machines (heavier)	1	51	2.82	1.307	0.001(1,4)
	2	58	2.91	1.081	0.001(2,4)
	3	78	3.26	1.314	0.032(3,4)
	4	33	4.00	0.866	0.001(4,1) 0.001(4,2) 0.032(4,3)
Improvements on the label of the beer bottles (e.g., more information, including in more than one language, different design)	1	51	2.20	1.281	0.002(1,3) 0.001(1,4)
	2	58	2.48	1.217	0.007(2,4)
	3	79	3.08	1.289	0.002(3,1)
	4	33	3.45	1.227	0.001(4,1) 0.007(4,2)
More involvement in beer/culinary tourism activities	West	90	3.02	1.027	0.016(1,3)
	South	54	3.50	1.042	
	Mid-West	45	3.62	0.960	0.016(3,1)
	North-East	32	3.59	0.979	

Item	Group	n	Mean	STD	SIG.
Buying new equipment for the brewery (light/medium size)	Staff: 0-9	136	3.14	1.117	
	Staff: 10+	83	3.49	1.064	0.021
Buying new machines (heavier)	Staff: 0-9	137	3.01	1.251	
	Staff: 10+	83	3.46	1.203	0.009
Improvements on the label of the beer bottles (e.g., more information, including in more than one language, different design)	Staff: 0-9	137	2.61	1.302	
	Staff: 10+	84	3.04	1.339	0.021
More involvement in beer/culinary tourism activities	Staff: 0-9	137	3.22	1.027	
	Staff: 10+	84	3.55	1.034	0.022
Buying new machines (heavier)	Exports	30	3.63	1.217	0.031
	No exports	190	3.11	1.243	
Improvements on the label of the beer bottles (e.g., more information, including in more than one language, different design)	Exports	30	3.47	1.137	0.002
	No exports	191	2.66	1.327	
Developing new working processes	Males	179	3.41	1.079	0.044
	Females	39	3.03	1.013	

* 1= 335 barrels or less, 2= 336-839 barrels, 3= 840-4193 barrels, 4= 4194-335,457 barrels.

Table 4: Main perceived future opportunities for the craft brewing business

Opportunities	n	Mean	STD.
Development of 'craft beer tourism' regionally/state wide (beer trails, brewery visitation)	214	4.22	0.652
Craft beer is a burgeoning sector (e.g., there is more consumption of craft beer)	214	4.18	0.635
Opportunities through improved quality of craft beer	214	4.11	0.746
Potential to expand brand value/recognition	214	4.11	0.690
Opportunities through more consumer education of craft beer products	214	4.04	0.759
Potential to sell craft beer at local/state businesses (e.g., at restaurants, bottle shops, pubs)	214	3.96	0.818
Potential through new niche products, including new flavours, more diversity of craft beer	214	3.87	0.832
Potential for new serving techniques, including selling craft lagers, kegged/canned craft beer	214	3.81	0.814
Potential for exports (e.g., to other USA states, to other countries)	214	3.74	0.956

Items	Group	n	Mean	STD	SIG.
Opportunities through improved quality of craft beer	1*	51	3.76	0.885	0.002(1,3)
	2	58	4.14	0.712	
	3	79	4.28	0.659	0.002(3,1)
	4	33	4.12	0.650	
Potential for new serving techniques, including selling craft Lagers, kegged/canned/bottled craft beer	1**	135	3.78	0.816	
	2	46	4.00	0.730	0.013(2,4)
	3	28	3.71	0.810	
	4	11	3.09	1.136	0.013(4,2)
Potential through new niche products, including new flavours, more diversity of craft beer	West	90	3.72	0.948	0.050(1,3)
	South	54	3.94	0.811	
	Mid-West	44	4.16	0.680	0.050(3,1)
	North-East	32	3.72	0.772	

Item	Group	n	Mean	STD	SIG.
Potential for exports (e.g., to other USA states, to other countries)	Exports	30	4.07	.868	0.034
	No exports	191	3.65	1.003	

* 1= 335 barrels or less, 2= 336-839 barrels, 3= 840-4193 barrels, 4= 4194-335,457 barrels.
** 1= Less than 3 years old, 2= 3-10 years old, 3= 11-20 years old, 4= 21-30 years old.

Figure 1: Proposed refinement of the RBTF and TOI based on the findings
Based on Barney (1991), Downs and Mohr (1979), Peteraf (1993)