The effects of environmental focus and program timing on green marketing performance and the moderating role of resource commitment

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Abstract

Should firms adopt sustainable marketing policy and develop green products? Most popular press says yes, but industry remains slow to act upon such initiatives. Drawing upon recent research in the Industrial Marketing Management Sustainability Special Issue, this research investigates the impact of green initiatives on firm performance and how the related commitment of resources impacts the effectiveness of those initiatives. The goal of this paper is to explore the effectiveness of green marketing on firm performance, in terms of financial performance, market performance, and service quality. Further, resource commitment is examined as a possible boundary condition of these relationships. Using multi-source data, the findings suggest that the commitment of proper resources is critical to the success of any green initiative. This study also supports the notion that being the first firm in an industry to initiate a green program provides few tangible benefits. More importantly, even firms with an environmental focus neglect to realize superior performance unless the specific strategy is matched with consistent support from top management.

1. Introduction

As global markets continue to evolve, the pillars of sustainability (i.e., environment, economy, and social justice) have become increasingly part of marketing decision-making (Huang & Rust, 2011). Developing marketing strategy around the issues of environment and economy has given rise to a focus on the importance of green marketing. As practical evidence, green marketing, which includes promoting a more sustainable imperative. Why?

Much of our understanding of green marketing comes from a consumer perspective (Gurau & Ranchhold, 2005; Hartman, Ibáñez, & Sainz, 2005; Kinnear, Taylor, & Ahmed, 1974; Peattie & Crane, 2005) or a political perspective (Menon & Menon, 1997; Rivera-Camino, 2007). This leaves very limited firm level knowledge of how firm-level “greening” actually impacts strategic viability. Extant research has led to an emerging understanding of how and why consumers are motivated to adopt/purchase green products, incorporate green practices into their lifestyles, and desire green products from companies (Luo & Bhattacharya, 2009; Sheng et al., 2011). While a behavioral approach is important to marketing’s demand-side understanding of green strategy, an important question remains: what impact does firm-level green marketing strategy (i.e., the adoption of green operating policies and the merchandising and sale of green products) have on firm performance?

The current study develops a basic understanding of how company “greening” really affects firm performance and further build this on “green business” and academic calls for research in this area are notable (Chan, He, & Wang, 2012). Sheng, Zhou, and Li (2011) note that adjustments in marketing strategy will follow consumer-led mindful consumption, and evidence is showing that green business is here to stay (Ottoman, 2009) yet industry only creeps toward the adoption of a more sustainable imperative. Why?

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budding research stream from a supply-side perspective. Specifically, we explore the effectiveness of green marketing, in terms of green marketing program timing and environmental strategic focus, on firm performance. Three types of firm performance are investigated: financial performance, market performance, and service quality. Furthermore, we examine resource commitment as a boundary condition in the green marketing and firm performance relationship.

2. Conceptualization

The genesis of the study of industry-level green marketing strategy has its roots in the investigation of corporate environmentalism and firm performance (Sheng et al., 2011). Numerous calls for research over the last few years indicate that our understanding of the subject remains slow going. As early as 1994, Drumwright (1994) noted the need for the exploration of the antecedents and consequences of industry-level socially responsible behavior. Banerjee, Iyer, and Kashyap (2003) initiated a discussion of the impact of corporate environmentalism on performance outcomes, including profitability, market share, and customer loyalty. In the current study, we further this discussion by investigating several strategic policy and product consequences of adopting green initiatives as marketing strategy (see Sharma, Iyer, Mehrotra, & Krishnan, 2010).

2.1. Contribution/gaps in the literature

Previous research indicates that strategies that influence consumer pro-social thought and firm corporate social responsibility may provide a source of competitive advantage for firms (Ellen, Webb, & Mohr, 2006). Somewhat contradictory research shows that while enviroentrepreneurial marketing policies have a positive impact on new product success, it does not contribute to a firm’s competitive advantage (Baker & Sinkula, 2005). Our goal is to explore this contradiction and determine if green resources, defined as any resource that reduces the firm’s negative environmental impact, actually provide a competitive advantage for firms. As such, we take a firm level perspective on green marketing that incorporates both policy- and product-based aspects. Additionally, recent research shows that green policy announcements may have no effect or a negative effect on a firm’s stock price (Mathur & Mathus, 2000). Even within the green marketing strategy literature, a gap exists in the basic understanding of how company greening actually impacts firm performance. We extend this research and investigate the impact of a firm’s green policies on its financial performance, market performance, and service quality. Incorporating these three distinct types of firm performance into the study adds a deeper understanding of how green marketing affects various aspects of the firm and its performance. All three performance measures are from the managerial perspective, as the data is perceptual in nature. In this study, financial performance is denoted as the managerial evaluation of their firm’s financial success within their industry, including current and expected ROI, relative to the competition. Market performance is the managerial perception of their firm’s ability to achieve market share, sales growth, and customer retention relative to the competition. Service quality is the managerial perception of the service that their firm delivers to its customers relative to the competition (Morgan & Piercy, 1998).

Rounding out the study, we go beyond the broad question of whether adopting green policies and innovating into green product markets impact firm performance; we also examine the conditions under which this company “greening” actually leads to a competitive advantage for firms. Because all firms can easily adopt superficial green policies, they are not enough by themselves to help firms gain a competitive advantage in the marketplace. Simply put, adopting corporate green policies puts a firm in a state of competitive parity; therefore, we investigate whether resource commitment allow firms to best utilize these tools in order to gain a competitive advantage.

The purpose of this study is to determine what impact the adoption of green policies and sale of green products has on firm performance. We draw from Resource Advantage Theory and Resource Based View of the Firm to suggest the following: the timing of the adoption of green policies and products and the degree to which firms integrate the environment into their strategic focus will impact the firm’s financial performance, market performance, and service quality. In addition, these relationships will be impacted by the amount of resources the firm commits to these environmental initiatives (Mariadoss, Tansuhaj, & Mouri, 2011).

2.2. A brief review of the literature

Green marketing strategy, especially as it relates to a firm’s use of resources, has been the subject of considerable research across disciplines. Hart (1995) introduced the Natural Resource Based View of the firm to guide this emergent stream, but as evidenced from recent special issues in top journals, the need still exists to better understand the intersection of the environment and the corporation (Etzion, 2007). Green marketing strategy has several closely related constructs and one challenge facing scholars has been properly defining the term. The underlying idea is that the adoption of environmentally friendly strategies or the creation of environmentally friendly initiatives should increase that firm’s performance (Chan, He, Chan, & Wang, 2012).

Enviroentrepreneurial marketing is one such related construct. Menon and Menon (1997) define it as “the process for formulating and implementing entrepreneurial and environmentally beneficial marketing activities with the goal of creating revenue by providing exchanges that satisfy a firm’s economic and social performance objectives” (p. 54). Basically, this posits that when companies engage in some activity that benefits the environment or addresses environmental concerns, customers may reward the company through loyalty and increased patronage, which should increase financial performance (Menon & Menon, 1997). Baker and Sinkula (2005) show that while enviroentrepreneurial marketing does not lead directly to a bigger share of the market, it does have a positive impact on new product success, which translates to an increased market share.

A similar term is Banerjee’s (2002) corporate environmentalism, defined as the degree to which firms “integrate environmental concerns into their decision making” (p. 177). Again, the outcome for the firm is an increase in overall performance measures, but the success of the initiative is driven by the commitment of top management to the environmental causes (Banerjee et al., 2003). This research began to emphasize the embodiment of environmentalism by employees, managers, and executives with the intent of building a green corporate culture that would be visible to the consumer (Chan, He, Chan, et al., 2012).

It is important to note that green strategies are not always implemented to increase profitability. Shareholders realize that, at least initially, these strategies may involve a trade-off, but usually they lead to efficiencies, which makes long-term financial sense. Taken together, these perspectives suggest that when firms adopt green marketing strategies, they should reap the benefit of superior performance. However, we posit that that performance may be contingent on support from management, program timing, and resource commitment.

2.3. Theoretical background

As is appropriate in much of the work in marketing strategy, Hunt (2011) recently made an ever-stronger case for the grounding of sustainability and green policy research in “resource centered” perspectives. As such, we ground our study in Resource Advantage Theory and the Resource Based View of the firm. Resource Advantage Theory (R-A) (Hunt & Morgan, 1996) holds that firms must be market-oriented in order to remain competitive in the marketplace and achieve superior performance. From a similar grounding, the Resource Based View of the firm (RBV) posits that resources are responsible for superior performance by...
way of developing a sustainable competitive advantage (Barney, 1991). Taken together, it is logical to expect that firms that do not leverage resources in a market oriented way (e.g., choose to ignore the customer and/or competition by using resources elsewhere) will suffer a competitive disadvantage in the marketplace.

According to this view, managers should adopt strategies that assemble and direct resources in a manner that results in an advantage over the competition's offering, including those which produce innovative offerings that include a mix of superior product and service quality (Hunt, 2011; Hunt & Morgan, 1995). Thus, gaining a competitive advantage is dependent on top management's ability to deploy resources to the market in a way that benefits the firm, customers, and other stakeholders. Building on RBV, we posit that, because firms are increasingly adopting green policies (Crate, 2000; Harris & Crate, 2002; Peattie & Crate, 2005), they will only develop a source of competitive advantage if the top managers within the firm direct the necessary leadership and resource commitment toward the development of green marketing policy. Strategy literature suggests that such support lies at the heart of any successful strategic initiative, green or otherwise (Porter & Kramer, 2006).

When a firm is recognized as being "green," that descriptor becomes a valuable resource, particularly relative to marketing and supply chain management functions (Chan, He, Chan, et al., 2012). When such resources are matched to strategy, they may become firm specific, and thus central to firm performance. Current conceptualizations of the RBV assume asset/resource heterogeneity (firms must have resources that differ from other firms), imperfect mobility of assets (firm assets must not be able to move easily between firms), and ex post and ex ante limits on competition (environmental temporal limitations exist on competitive resource position and valuation) (Peteraf, 1993). These assumptions allow for the comparison of resource bundles based on convertibility, rarity, imitability, and substitutability (Srivastava, Shervani, & Fahey, 1998). Effective green marketing and firm(s)' abilities to utilize such market based strategy are argued to be valuable, rare, inimitable, and organizationally specific when managed correctly. This is similar to the resource-based prescriptions drawn by marketing researchers examining sustainability (Hunt, 2011).

The focal outcome of RBV (Barney, 1991) is the creation of extraordinary rents by the firm (Peteraf, 1993). As with most marketing strategy, we suggest that in a green marketing context, customer value is formed as the offering moves from policy to product across the offering's life. Thus, under conditions of effective deployment (e.g., resource support in the development process of green policy and innovation of green products) the firms that make up the supply chain may generate superior value (Priem & Butler, 2001). Specifically, assets become capabilities in combination with ascribed organizational processes (cf. Day, 1994). These marketing utility “bundles” include skills and knowledge that create firm-specific asset resource combinations (Amit & Schoemaker, 1993; Coff, 2002).

The managerial goal of RBV is the development of core competencies through leveraging a firm’s strategic resources. As such, a discrete green policy or product is not (yet) a core competency. Rather, a core competency is driven by a set of implemented initiatives that influence a set of capabilities creating a core competency for these “green” firms. Core competencies are defined as “the collective learning in the organization, especially how to coordinate diverse production skills and integrate multiple streams of technologies” (Prahalad & Hamel, 1990, p. 79). This indicates that for a firm to develop a green-based core competency, the value creation process would be dependent upon firm commitment of resources (Day, 1994). Hence, recent studies stress the importance of the improvement of resource commitment and top management support of green policy and innovation if initiative performance and overall performance is to improve.

We contend that in order to gain a competitive advantage (in the form of superior market performance, financial performance, and service quality) through a green strategy, a firm must have managers and specific resources committed to that strategy. We suggest that key resources that contribute to competitive advantage through green policies are: 1) making the window of opportunity (environmental program timing), 2) having a top management supported environmental strategy focus (environmental strategic focus), and 3) committing specific resources to green strategy development and implementation (resource commitment). A discussion of how each of these resources is related to firm performance follows.

2.4. Window of opportunity: program timing

Program timing is critical to green marketing because, in general, new markets or innovations create windows of opportunity for firms within a given industry. We refer to program timing as when a firm implements a new process or policy in an effort to achieve that window (Richey, Daugherty, Genchey, & Auty, 2004). Previous research shows that first-mover firms in a new market or new technology can enjoy long-term superior performance compared to those firms that enter a market or adopt a key technology later (Lambkin, 1988; Parry & Bass, 1990). These firms are more likely to gain a reputation for being an innovator in that technology and even develop a core competency around it. Follower firms, consequently, lack this competency. Because consumers are inundated with environmental issues across business, social, and political spheres, these “copycat” firms may be perceived as merely creating a false impression of posturing to consumers to gain favor (Lauffer, 2003). In addition, and more important to this study, these firms may be susceptible to projecting an image of “greenwashing,” particularly if their implementation does not match their orientation (Banerjee et al., 2003).

However, being a first mover does have disadvantages, which may be prominent with environmental marketing. Research also shows that when a later entrant to a market or adopter of a policy builds on the early mover, the later entrant may be able to achieve superior performance, especially where uncertainties exist in the market (Lambkin, 1988; Wensley, 1982). In fact, the early entrant may even suffer a strategic disadvantage if other firms can easily utilize the investments made by the first firm (Ghosh & John, 1999; Gurumurthy, Robinson, & Urban, 1995; Lieberman & Montgomery, 1998; Porter, 1996). Additionally, Haanaes et al. (2011) identified two distinct segments of firms: cautious adopters and embracers. Cautious adopters view sustainability as a vehicle for cost cutting, resource efficiency, and risk management. By contrast, embracer companies recognize that sustainability strategies provide a means for gaining competitive advantage through innovation, process improvements, brand building, and access to new markets. Embracers also represented the highest-performing businesses in the study. To this point, the benefits offered to a “first-mover” firm in environmentally friendly policies and/or products are uncertain (Banerjee et al., 2003).

In their seminal time-based study, Kerin, Varadarajan, and Peterson (1992) propose that when later-entrants to a market have the advantage of low imitation costs, free-rider effects, scope economics, or learning from the pioneer’s mistakes, the magnitude of the first-mover advantage is lowered and the effect of first-mover advantage on market performance and profitability is diminished. Because it is relatively easy for firms to adopt green policies and to imitate green products, this would indicate that later-entrants, or followers, will benefit from moving into the market after learning from the first-movers’ mistakes. Kerin et al. (1992) also assert that “the lower the buyer’s search and evaluation costs and/or the costs of making a purchase mistake, the smaller the first-mover differentiation advantage due to non-contractual switching costs” and that “there is a positive relationship between the differentiation advantage of the first mover due to non-contractual switching costs and the extent of investment in co-specialized assets made by buyers” (p. 46). The purchase of green products and the patronage of firms with green policies do not generally involve contracts nor do they generally require specialized assets on the part of the buyers. Laroche, Bergeron, and Barbaro-Forleo (2001) find
that purchasers of green products do not consider purchasing these products inconvenient, a finding supported by the fact that 80% of Americans purchase at least some green products (Advertising Age 2007). This would indicate that purchasing green products may not typically require buyers to engage in large amounts of search and evaluation and the cost of purchase mistakes should be low. Therefore, following Kerin et al. (1992), each of these factors would indicate that first-mover advantages are minimized or eliminated in regard to green marketing strategies.

Golder and Tellis (1993) find that market pioneers (or the first firm to sell a new product) have a failure rate of 47% and have an average market share of only 10% while those firms that are early to follow market pioneers have failure rates of only 8% and market shares of 28%. This suggests that being a market pioneer is not as valuable as being a market follower. Firms currently offering environmentally friendly products and employing environmentally friendly policies could be classified as market pioneers. Based on these findings, we deduce that firms adopting green marketing strategies may benefit by being an early market follower but may be at a disadvantage if they are the market leader/pioneer.

Thus, while it may seem beneficial for a firm to move quickly in developing their green strategy and implementing it in order to gain a competitive advantage, this may not always be the case (Lee & Grewal, 2004; Lieberman & Montgomery, 1998). Consider a firm that implements a green strategy relatively early compared to its competition. Committing additional resources to that strategy may not create the same benefit as it would for a firm that adopted the same strategy a bit later. For the first mover, the timeliness of the strategy was the advantage but also the guinea pig. The late adopter may have to invest more resources than the first-mover simply to be on par with the first mover. However, this firm will also learn from the mistakes of the early adopter. In a sense, the late adopter can build the green strategy into its business model once the kinks have been worked out. The same initiative will, then, cost less, which should lead to financial performance. The availability of knowledge should make the strategy easier to promote, which may increase market performance. Finally, the strategy will be more integrated into the firm because of the late adoption, allowing for more time to be focused on customer service. Consistent with prior research, as well as the RA and RBV notion that managers may leverage resources (program timing) in order to produce higher rents for the firm (three types of firm performance), we hypothesize that:

H1a. Green marketing program timing has a direct positive effect on financial performance, such that followers experience higher levels of performance than early adopters.

H1b. Green marketing program timing has a direct positive effect on market performance, such that followers experience higher levels of performance than early adopters.

H1c. Green marketing program timing has a direct positive effect on service quality, such that followers experience higher levels of performance than early adopters.

2.5. Top management support: strategic environmental focus

Top management support can be defined as the leadership and motivation provided by managers for a given endeavor (Van Egeren & O’Connor, 1998). Supportive management can be particularly essential with regard to environmental strategy focus (Pujari, Peattie, & Wright, 2003), which this research defines as a reflection of the degree of “integration of environmental concerns” into the strategic planning process (Banerjee, 2002, p. 177). Business strategy literature has recognized the need to integrate the resources required for a successful strategy with corresponding planning processes to create a “road map” for strategy execution (Anderson, 1982; Barney, 1991; Cooper, 2000; King, 1983; Kohli & Jaworski, 1990; Narver & Slater, 1990). We suggest that in order to attain superior performance from environmental initiatives, managers must integrate environmental priorities into their strategic planning. An environmental strategy utilizes the same logic as any business strategy; however, the firm achieves its goals while minimizing negative environmental consequences (Olson, 2008). While this type of strategy begins on the corporate level, visible efforts emerge at the business unit level and operational levels (Stone & Wakefield, 2000). For that reason, we use Banerjee’s (2002) framework, which incorporates both environmental corporate strategy and environmental business/functional strategy. Building from the 6P logic of Liu, Kasturiratne, and Moizer (2012), our conceptualization specifically encapsulates and emphasizes Liu et al.’s Ps of People (resource commitment), Planning (green policy), Process (green policy), Project (green products), and Product (green products).7

Firms have publicly expressed environmental concern for decades, but until recently, most have not been able to garner a competitive advantage from this alone (Lubin & Esty, 2010). This dilemma presents an obvious challenge to managers who have to respond to a projected growing consumer desire for green offerings (Sharma et al., 2010) and seen limited economic return on investment in their green investments (Chan, He, Chan, et al., 2012). However, managers have started to realize that by incorporating this mindset not just on the surface (e.g., corporate mission statement, advertising, website), but into the actual business strategy, they can gain fruits from their labor. When employees receive guidance from top management in the development and implementation of a firm’s activities, it creates enthusiasm for the activities and the rationale behind them (González & Palacios, 2002).

Management support is also instrumental in the success of a new initiative because by empowering employees to achieve a unified goal, it becomes more visible to consumers. Chan and Lau (2000) found that when a firm integrates the natural environment into its marketing strategy, it essentially puts its words into practice, which has a positive impact on consumer attitudes. This should increase the authenticity of the environmentally-friendly offering as well as the consumer trust in the company (Crane, 2000). Because trust leads to commitment (Morgan & Hunt, 1994), consumers will be more likely to purchase from a firm that matches its environmental concern with a strategic focus on the environment than one whose strategy is not environmentally-focused. This increased patronage should translate to increased firm performance. Consistent with prior work and RBV, strategic environmental focus as a resource could be leveraged to produce a competitive advantage for the firm in the form of financial performance, market performance, and service quality.

H2a. Strategic environmental focus is positively related to financial performance.

H2b. Strategic environmental focus is positively related to market performance.

H2c. Strategic environmental focus is positively related to service quality.

2.6. Green strategy development and implementation: resource commitment

As discussed, firms pursue competitive advantage through assembly of valuable, rare, inimitable, organizationally distinct, and substitution resistant bundles of resources (Barney, 1991). Yet development of a competitive advantage requires that the firm not just possess such resources, but that the firm effectively bundle and apply those resources in a manner that enhances the firm’s capabilities in comparison to its competitors (Hunt & Morgan, 1995, 1996; Mariadoss et al., 2011).

7 Promotion was outside the scope of the current study.
Resource commitment can be defined as “how valuable resources are allocated or targeted to do the most good” (Richey, Genchev, & Daugherty, 2005, p. 234). The manner in which a firm dedicates its resources is critical, especially with regard to performance-enhancing environmental initiatives.

In H1a–H1c, we propose that followers in adopting green marketing strategies will have higher overall firm performance when compared to first-movers. However, simply being the market follower may not be enough to achieve a competitive advantage and superior performance; firms should also apply their resources effectively to their green marketing strategies. Based on this, resource commitment should allow the firm to better leverage well-timed environmental marketing initiatives and increase performance. Relative to first-movers, followers should make a high resource investment into their green marketing strategies in order to achieve superior performance. However, simply throwing resources at an ill-timed plan is unlikely to develop benefits for the firm (Ghosh & John, 1999; Lieberman & Montgomery, 1998). As such, those who are first-movers with their green marketing strategies may not receive any benefit from committing additional resources to their green strategy initiatives. Therefore, consistent with the RA and RBV theoretical perspective of resource commitment as a resource to be leveraged as a competitive advantage and prior research on first movers and fast followers, we hypothesize that:

H3a. Resource commitment moderates the positive relationship between green marketing program timing and financial performance, such that when resource commitment is high, then this relationship is stronger and when resource commitment is low, this relationship is weaker.

H3b. Resource commitment moderates the positive relationship between green marketing program timing and market performance, such that when resource commitment is high, then this relationship is stronger and when resource commitment is low, this relationship is weaker.

H3c. Resource commitment moderates the positive relationship between green marketing program timing and service quality, such that when resource commitment is high, then this relationship is stronger and when resource commitment is low, this relationship is weaker.

Resources abound in the area of environmental strategy. Consider that an increasing number of the new products being developed are to address energy conservation, pollution, recycling and other sustainable products and processes (Lubin & Esty, 2010; Sharma & Iyer, 2012). Nidumolu, Prahalad, and Rangaswami (2009) predict that, over the age that combination of resources (Day & Nedungadi, 1994).

A green resource is any firm resource that minimizes or reduces negative environmental impact. Much of the recent marketing literature has shown that resources are much more valuable when used simultaneously than when used separately or in isolation (Tokman & Beitelspacher, 2011). In fact, the basic premise of RBV is that firms derive sustainable competitive advantages by how they bundle and leverage that combination of resources (Day & Nedungadi, 1994).

The proper implementation of resources to any strategy, therefore, is critical to that strategy’s success. Conversely, the improper implementation can actually be detrimental to the strategy. In fact, the firm might not even break even on this type of initiative. Because it shifted its priorities away from its strategic focus and core customer base, its performance may actually decrease because those tangible resources are now sunk costs that can no longer be implemented for the benefit of the firm. If instead, the allocation of resources embodies the firm’s strategic focus, it will more appropriately address customer needs. Consequently, the firm may see an increase in performance measures due to increased customer satisfaction.

Therefore, it may not be enough to simply integrate environmental priorities into strategic planning or devote resources to environmental policies. Top managers may need to both integrate the environment into their decision making and devote the necessary resources to these decisions. When top managers have a low degree of environmentalism in their decision making, committing resources to green policies may actually reduce the performance of the firm because resources are being spent on initiatives that are not reinforced by the firm’s strategic planning. However, when a firm integrates environmental policies into its strategies and commits the necessary resources to implement them, they will see greater performance compared to firms that devote fewer resources to these green policies. Therefore, as suggested by RA, RBV, and prior research, we hypothesize that:

H4a. Resource commitment moderates the positive relationship between environmental strategy focus and financial performance, such that when resource commitment is high, this relationship is strong and when resource commitment is low, this relationship is weak.

H4b. Resource commitment moderates the positive relationship between environmental strategy focus and market performance, such that when resource commitment is high, this relationship is strong and when resource commitment is low, this relationship is weak.

H4c. Resource commitment moderates the positive relationship between environmental strategy focus and service quality, such that when resource commitment is high, this relationship is strong and when resource commitment is low, this relationship is weak.

The expected relationships described by the hypotheses are illustrated in Fig. 1.

3. Research design

3.1. Data collection

Panel data was collected using the online service, Zoomerang (Kwortnik, Wynn, & Ross, 2008; Richey & Autry, 2009). In addition to Zoomerang’s panel of respondents, invitations to participate in the survey were issued to members of the National Grocer’s Association — a collection of independent grocers in North America. Targeted survey respondents were top management (owners or marketing managers) with knowledge of green marketing activities. If the initial recipient was not aware of the company’s green marketing activities, they were instructed to forward the survey to the most appropriate respondent. The overall sampling frame was chosen to develop a broad generalizable industry perspective while also allowing some focus on the food and grocery business where green marketing is a heavily debated component of business.

Three hundred surveys were distributed and 204 were completed from a variety of sales, retailing, and wholesaling organizations. Thirty four of the respondents came from the National Grocer’s Association. Surveys were distributed electronically via Zoomerang with three follow-up emails set at two-week intervals. This response rate was 68%, which is high for this type of research. Still, the authors employed a worst-case-resistance technique to make sure non-response bias was not an issue (Rogelberg & Stanton, 2007). Using the overall correlation of our variables (0.389), our final sample (204), and non-respondents (96), this technique determines what the average correlation of non-respondents would have to be in order to disprove our results. Those non-respondents would have to correlate on the studied variables at 0.0005, which seems highly unlikely. Thus, we conclude that non-response bias is not an issue.

The industries represented by this sample are included in Table 1 and are purely used for descriptive purposes. Industry type did not have a significant effect and thus did not factor into the regression analyses. The largest number of respondents came from retailing organizations (39.7%), and the next largest came from consumer goods organizations (9.8%).

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3.2. Measures

Existing scales were used to operationalize all measures used in this study. Measures of program timing and resource commitment were adapted from Richey et al. (2005). Environmental strategic focus was operationalized using scales adapted from Banerjee (2002). Firm performance was measured through three self-report scales detailing perceived financial performance, market performance, and service quality (Morgan & Piercy, 1998). Financial performance is defined as the managerial evaluation of their firm’s financial success within their industry, including current and expected ROI, relative to the competition; market performance is defined as the managerial perception of their firm’s ability to achieve market share, sales growth, and customer retention relative to the competition; service quality is defined as the managerial perception of the service that their firm delivers to its customers relative to the competition (Morgan & Piercy, 1998). The wording for each of the scales is available in Table 3 along with the confirmatory factor analysis results as mentioned below.

3.3. Descriptive statistics

The means, standard deviations, and correlations are displayed in Table 2. Market performance and financial performance are highly correlated, which is reasonable given the nature of the constructs. Also, resource commitment is highly correlated with the focal exogenous variables. Construct reliability is evaluated using Cronbach’s alpha. All of the measures exhibit acceptable levels of reliability, with the minimum coefficient alpha at .86.

To test for multicollinearity, tolerance and the variance inflation factor (VIF) values were examined. Tolerance values above 0.1 and VIF values less than 10 indicate low multicollinearity (Hair, Black, Babin, & Anderson, 2009; Johnson & Wichern, 2007). In this study, tolerance values ranged from .20 to .87, while VIF values ranged from 3.21 to 5.01, indicating that multicollinearity does not unduly influence this data.

3.4. Confirmatory factor analysis and validity

Prior to testing our hypotheses, we performed a confirmatory factor analysis with LISREL 8.8 (Jöreskog & Sörbom, 2001) to ensure that the individual items loaded on their intended factors significantly and with sufficient effect sizes. As illustrated in Table 3, all of the program timing, environmental strategic focus, resource commitment, market performance, financial performance, and service quality items did load on their intended factors. This analysis yields good overall fit for the hypothesized six-factor model ($\chi^2 = 1314.19$, $df = 572$, $p < .01$), while the overall $\chi^2$ is significant, the $\chi^2 / df = 2.29$, the mean square error of approximation (RMSEA) is .079, the non-normed fit index (NNFI) is 0.91, and the standardized RMR is .039. The error covariances were allowed to correlate within the same scales. In addition, as can be seen in Table 3, each of the standardized factor loadings is significant ($p < .01$) at a moderately high level, with the lowest loading being .76.

To demonstrate discriminant validity, we conduct a Fornell and Larcker (1981) test, placing the square roots of the average variance extracted along the diagonals of Table 2. As shown, these values exceed the correlations with variables in the corresponding rows and columns. Evidence for discriminant validity comes from the fact that the shared variance among any two constructs is less than the average variance explained by the items of that construct.
To further establish the discriminant validity of the constructs, we compare the fit of the hypothesized six-factor model to several nested alternatives. The first alternative model is a five-factor model that combines market performance and financial performance ($\chi^2 = 1379.19$, $df = 577$, $p < .001$, $\chi^2 / df = 2.39$, NNFI = .91; standardized RMR = .040; RMSEA = .082). A second alternative model is a four-factor model that combines the three performance variables, financial and market performance and service quality ($\chi^2 = 2440.99$, $df = 581$, $p < .001$, $\chi^2 / df = 4.20$, NNFI = .84; standardized RMR = .085; RMSEA = .12). Finally, we estimate a five-factor model combining environmental strategic focus and resource commitment ($\chi^2 = 2050.54$, $df = 577$, $p < .001$, $\chi^2 / df = 3.55$, NNFI = .87; standardized RMR = .047; RMSEA = .111).

As these results suggest, the fit of the hypothesized six-factor model is stronger than the three nested alternatives. Therefore, we move on to test the hypotheses.

### 4. Hypotheses testing results

To test the hypotheses, a series of hierarchical moderated multiple regression analyses were performed (Cohen, Cohen, West, & Aiken, 2003): one for each of the endogenous performance variables. See Tables 4, 5, and 6 for the results for financial performance, market performance, and service quality, respectively. The independent and moderator variables were centered prior to analysis. In each regression, the variables were stepped in sequentially, including interaction terms for program timing by resource commitment and environmental strategic focus by resource commitment. By entering each variable in the regression equation separately, we are able to isolate the unique variance explained by each predictor in the interaction. Fig. 2 provides an illustration of the tested relationships.

**Hypotheses H1a–H1c** predict that program timing has a positive effect on financial performance ($H1a$), market performance ($H1b$), and service quality ($H1c$). Main effects for program timing were not supported by the results in Tables 4, 5, and 6. Likewise, hypotheses $H2a$, $H2b$, and $H2c$ predict that environmental strategic focus has a positive effect on these performance outcomes. There were no significant main effects for environmental strategic focus in any of the models to support hypotheses $H2a$, $H2b$, and $H2c$. Hypothesis $H3a$ predicts that resource commitment moderates the relationship between program timing and financial performance. To
Hierarchical moderated regressions results.

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>p-Value</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Program timing F(1, 208) = 19.869, p &lt; .001</td>
<td>0.022</td>
<td>0.772</td>
<td>0.087</td>
</tr>
<tr>
<td>Step 2: Environmental strategic focus F(2, 207) = 10.885, p &lt; .001</td>
<td>0.042</td>
<td>0.657</td>
<td>0.095</td>
</tr>
<tr>
<td>Step 3: Resource commitment F(3, 206) = 7.959, p &lt; .001</td>
<td>0.189</td>
<td>0.070</td>
<td>0.104</td>
</tr>
<tr>
<td>Step 4: Program timing × resource commitment F(4, 205) = 7.461, p &lt; .001</td>
<td>−0.123</td>
<td>0.018</td>
<td>0.127</td>
</tr>
<tr>
<td>Step 5: Environmental strategic focus × resource commitment F(5, 204) = 10.162, p &lt; .001</td>
<td>0.232</td>
<td>0.000</td>
<td>0.199</td>
</tr>
</tbody>
</table>

N = 210.

Unstandardized regression coefficients from the last step.

Hierarchical moderated regressions results.

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>p-Value</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Program timing F(1, 208) = .555, p &gt; .05</td>
<td>−0.141</td>
<td>0.096</td>
<td>0.003</td>
</tr>
<tr>
<td>Step 2: Environmental strategic focus F(2, 207) = 2.129, p &gt; .05</td>
<td>0.186</td>
<td>0.070</td>
<td>0.020</td>
</tr>
<tr>
<td>Step 3: Resource commitment F(3, 206) = 1.413, p &gt; .05</td>
<td>0.007</td>
<td>0.951</td>
<td>0.020</td>
</tr>
<tr>
<td>Step 4: Program timing × resource commitment F(4, 205) = 3.203, p &gt; .05</td>
<td>−0.015</td>
<td>0.790</td>
<td>0.059</td>
</tr>
<tr>
<td>Step 5: Environmental strategic focus × resource commitment F(5, 204) = 3.490, p &lt; .005</td>
<td>0.124</td>
<td>0.037</td>
<td>0.079</td>
</tr>
</tbody>
</table>

N = 210.

Unstandardized regression coefficients from the last step.

The hierarchical moderated multiple regression analysis shown in Table 5 supports this hypothesis (p < .05). To further investigate this interaction, we performed a simple slope test (Aiken & West, 1991), finding that the slope for low resource commitment is different from zero (t = 1.93, p = .045), while the slope for high resource commitment is not significantly different from zero (t = −1.57, p = .117). A graphical representation of this interaction is shown in Fig. 4. As predicted, high resource commitment produces higher market performance in conditions of low program timing. Hypothesis H3c predicts that resource commitment moderates the relationship between program timing and service quality. As seen in Table 6, this relationship was not supported (p = .790).

Hypothesis H4b predicts that resource commitment moderates the relationship between environmental strategic focus and financial performance. The results in Table 4 support this hypothesis (p < .01). As seen in Fig. 5, this disordinal interaction indicates that high resource commitment produces higher financial performance than low resource commitment under conditions of high environmental strategic focus. However, low environmental strategic focus with low resource commitment leads to higher financial performance than low strategic focus with high resource commitment. To further investigate this interaction, we performed a simple slope test (Aiken & West, 1991) by estimating the simple slopes of the two levels of resource commitment. The simple slope for low resource commitment had a negative, significant value (t = −2.07, p < .05), while the high resource commitment had a positive, significant value (t = 2.83, p < .01), confirming that the slope of each line is significantly different from zero. These results provide further support for the interaction hypothesis.

Fig. 2. Model of tested relationships.
Hypothesis H4b predicts that resource commitment moderates the relationship between environmental strategic focus and market performance. As indicated in Table 5, this hypothesis was supported (p < .001) by the results of the hierarchical moderated multiple regression analysis. A simple slope test of the two levels of the moderator showed that the slopes of both high resource commitment (t = 2.83,
More importantly, this research indicates that neither the managerial mover in launching green initiatives as part of the environmental focus nor the timing of that initiative significantly affects the firm performance outcomes without consistent message from management in the form of resource support.

Particularly interesting is the absence of significant effects between program timing and service quality, regardless of the degree of resource commitment. The findings suggest that firms do not perceive environmental initiatives as a component of the service that firms deliver to their customers. This relationship may be one, which changes over the coming years. Consumers profess a desire to be green and are beginning to seek out products based in part upon their environmental impact. This means that consumers may soon consider this aspect when evaluating a product’s total bundle of benefits, and they may derive more value in the service quality if that firm places priority in its environmental focus.

The Resource Based View’s sister theory, Resource Advantage Theory (R-A theory), posits that a firm can sustain a competitive advantage if it continually strives to meet and exceed customer expectations (Hunt & Morgan, 1996). Often these needs are associated with offerings that are either innovative or offer superior quality to that of the competition. Environmentally-friendly products and services represent a relatively new customer need. Our findings demonstrate that when firms address this need, they can garner a competitive advantage. Perhaps more in line with R-A theory, the competitive advantage only occurs with proper resource implementation.

The current research investigates how the commitment of these resources affects the firm’s ability to meet a burgeoning customer expectation for environmentally-friendly offerings. We find that both the timing of the green initiative and the environmental strategy itself are dependent upon the allotment of the firm’s resources to the green efforts. This resource commitment underlies a strong and consistent support from managers, which is a key component of R-A theory (Hunt & Morgan, 1996). Researchers should extend this RBV perspective to embrace the value propositions for R-A theory.

Besides reinforcing R-A theory, this research extends the theoretical understanding of green strategy. While the literature on consumer behavioral response to environmental offerings continues to elude scholars, our results show that marketers are beginning to grasp some of the industry-level indicators of successful green strategy. The adoption of green products and subsequent sustainable consumption are of growing importance to businesses, consumers, and society at large. Both of these depend on firms having the ability to present these offerings while remaining — or becoming — economically viable and financially profitable. This study explores some of the factors that lead to increased firm performance and will allow those firms to continue their environmental efforts and even explore new ones. Apple continues to produce innovative technology in large part because it is profitable. If consumers did not buy the iPhone4, there would be no iPhone5. In the same way, a firm on the cutting edge of environmental responsibility will only continue its eco-innovation if it is financially possible to do so (Sharma & Iyer, 2012). Therefore, one of the major contributions of this research is to identify some of those bridges to performance via green initiatives, which may ultimately lead to green adoption.

5. Conclusions and discussion

5.1. Theoretical contributions

This research explores the effects of green marketing initiatives on firm performance and the influence of managerial decisions on those relationships. The results lead to several conclusions. First, program timing is important when leveraging financial and market-based benefits from environmental initiatives. As with innovative initiatives studied in previous research (Lee & Grewal, 2004; Lieberman & Montgomery, 1998), we find no measurable advantage to being a first mover in launching green initiatives as part of the firm’s strategy. More importantly, this research indicates that neither the managerial focus of the environmental initiative nor the timing of that initiative influences firm performance outcomes without consistent message from management in the form of resource commitment.

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meticulously developed program brought to market after a competitor has implemented a similar program will have a higher impact on performance than a green program that the firm brought to market prematurely with the goal of simply being first.

The importance of adopting green policies and products has been touted in the popular press for several decades. This may cause firms who do not fully embrace a green strategy to wonder if they have missed the boat on adopting green initiatives. We show that this is not the case. Firms can still benefit from adopting green policies and selling green products if they both (1) learn from the mistakes of the early adopting firms and (2) effectively allocate their resources into green initiatives.

Firms have a limited amount of areas in which to invest their resources, and perhaps the most important implication for firms is that green initiatives require heavy resource commitment to be effective. Basically, a firm that stakes its claim on being environmentally-conscious will be better served if it backs that claim up in practice. Companies that invest time and energy into the development of environmental strategy must match this with the proper allocation of financial, managerial, human, organizational, and physical support. It is one thing for a firm to announce their environmental efforts; it is another thing entirely to put those words into action. Our results indicate that the effectiveness depends on the latter.

From a human, organizational, and managerial standpoint, firms that allocate their best employees to environmental initiatives will reap the most benefit. This does not mean that firms need only hire talented and qualified individuals; they must also institute training and personal development programs to reinforce the environment as a company priority. Managerially, this focus must be embodied on every level of the company so that consumers can easily identify the company as environmentally-conscious. An organizational culture will not only help prevent consumer skepticism, but it will help managers leverage their brand name and reputation to gain the most benefit from their efforts. Finally, the coordination of human capital must be efficient and self-correcting allowing for proper execution of these programs.

Financially and physically, firms that implement a green initiative should be willing to invest actual dollars into the program. An initiative of any kind requires some level of fiscal support and an environmental strategy is no different. The hiring and training of employees and leveraging the green brand reputation must be matched by proper location, green facilities, factory space, and equipment.

5.3. Limitations and future research

Green strategy research has many obstacles, yet one of the most challenging is also what makes it most exciting. Because the landscape is constantly changing, this research has several limitations as well as directions for future research. One limitation of this study is that no distinction was made in the sample between business-to-business and business-to-consumer firms. Dyadic data is needed to see if there is a distinction between the perceptions of value that end consumers and business customers ascribe to firms that are leaders in environmental practices.

More generally, tangibility is an issue with the adoption of green products. Consumers want to know the particulars about the environmental initiative and how it is helping the planet. Specifically, they want to know how their individual purchase impacts the planet. Green research suffers from a similar problem. Scholars and managers alike struggle to differentiate between what makes one strategy “greener” than another and how that strategy translates to performance outcomes. The widely accepted constructs used in green research are flawed in that they are generally self-reported by the managers and employees within the firm.

This limitation does provide an excellent platform for future research. The same way that some of the more stringent environmental certifications require strict and tangible guidelines, scholars should develop tangible constructs for green strategy and eco-orientation. This would take much of the guesswork and self-report bias out of the green strategy research and allow scholars to pinpoint the specific programs or activities that provide positive returns and those that do not. Not only would this help companies maximize their green efforts; it would also spur the adoption of green products. Only those strategies that work would be consistently enacted by firms because those would be the initiatives that were reinforced by consumer response.

Finally, while this study begins to address the importance of the timing of green strategies, more research is needed to fully develop the timing blueprint for maximum firm performance. Our research shows that it may benefit a firm more to be the first “adapter” of a proven innovation rather than the first adopter of an unproven one, but this may vary across industries. Once a green innovation proves successful in one industry, the amount of time needed to work out the kinks in another may be reduced. For instance, reverse logistics is an emerging avenue for the “greening” of a business’s supply chain (Gencchev, Richey, & Gabler, 2011; Lam & Lam, 2012). A firm in the pharmaceutical industry that successfully implements an innovation in reverse logistics may be a market pioneer and, consequently, incur the costs of being first. Later, if a firm in the grocery sector implements the same innovation, that firm will be a pioneer to that industry but a market follower to the pharmaceutical firms. In theory, it would be able to learn from the successes and failures of the entire pharmaceutical industry. Future research should examine these adapters and adopters, as well as the interplay among industries, especially those in which the competition for environmental initiatives is high.

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