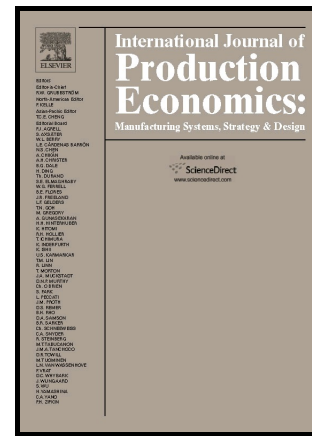


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in china: Analyzing the literature

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Abstract

China has faced environmental concerns due to its increased economic growth. Corporations are under various pressures to address environmental issues and may be critical to social change in China. Competitive advantage from building green markets and green consumers can occur as social mores and norms evolve. Sustainable consumption can also be managed through green marketing and green consumerism efforts. This paper reviews the emergent research on green marketing and consumerism in China. A total 52 peer reviewed journal publications are identified and reviewed from a variety of journals ranging from technological to marketing based journals. A conceptual framework has been used to identify gaps and future research directions based on marketing strategy, industrial sector, international comparisons, and green consumerism, all of which play a role in society and its sustainability. This work is the first to analyze green marketing and consumerism in China.

Keywords: China, Marketing, Green Marketing, Green Consumerism, Environmental Sustainability, Literature Review

1. Introduction

The history of environmental degradation awareness in China dates back to the late 4th century BCE; Taoist philosophy portrays a harmonious man-nature relationship (Ip, 1983). As China industrialized Taoism's philosophy was veiled. China's economy soared after its opening to the world through its open-door policy in late 1978. This growth caused significant social change and placed extraordinary pressure on the natural environment and the wellbeing of its citizens. China is in early sustainable development and green management stages, but the future will see a maturing perspective on the social well-being of the average Chinese citizen. Given China's large population, it represents the world's largest consumer market and is the third largest waste producer in the world (Chan, 2008). Adopting green management and sustainable development practices in China should have a positive impact on its own environment and global green economy expansion.

Green marketing is the context of this study. Green marketing is meant to cover the whole marketing field, serving as an overarching topic. Green marketing strategies and green consumerism are both under this green marketing umbrella. Green marketing issues in China show an integration of efforts from government, organizations and individual citizens. Initiatives from government establish a favorable social environment for the implementation and development of green marketing efforts. Industrial organizations and consumers both play a large supply-demand role in decoupling consumption and affluence from environmental degradation and a green economy (Gouvea, et al., 2013). Green marketing efforts from lower levels of analysis can be either initiatives from organizations or consumers. These two players impact and interact with each other. On the one hand, organizations select and introduce green marketing strategies to consumers, with consumers responding to green marketing strategies in their purchase behaviors.

Alternatively, consumers present a market demand for green products. Accordingly, green marketing organizational strategies seek to fill the gap in the market. This China study shows a significant research and literature gap both from green marketing strategies at the social and organizational level and green consumerism from the individual level analysis.

Given China's environmental degradation concerns (Grumbine, 2014), Chinese consumers realize that although their affluence has increased, their quality of living from an environmental perspective has worsened. For these and other reasons, organizations have experienced greater consumer and social pressures to green their products and processes (Zhu, et al., 2012). This social change and economic industrial and market evolution is under investigation both in China and globally. These pressures will not only influence China's improvement, but also have broader implications globally. These global pressures influence Chinese green markets and consumers. For example, green innovations and marketing of products manufactured in China for consumer markets in developed countries and in China currently influence both domestic and international green product and market development (Zhu et al., 2012).

Even with the importance of green market development in China, China-specific research in green marketing and consumerism is relatively limited. This study seeks to further delve into this issue by offering a structured literature review to help further understand and guide the field. The goals are to: 1) summarize and analyze the existing research by identifying and grouping the topics, trends and major issues; and 2) propose a conceptual framework of the field that can understand existing and contribute to future theory development. This structured literature review is conducted by comprehensively collecting and analyzing relevant papers (n=52) between the years 1999 to 2015.

This paper contributes to the literature by being one of the first to comprehensively review and evaluate literature related to green marketing and consumerism within China. The second contribution is to provide guidance for future researchers seeking to investigate corporate and market sustainable (green) development.

The structure of the paper is as follows. After providing context of China's environmental issues, consumers' attitudes and basic terminology of green marketing, the methodology for the structured literature review is described. Within the methodological section, a conceptual integrative framework is offered. Using this framework, major findings from research studies and publications during this period are presented. Next a detailed analysis of China's green marketing mix, relationships across industrial sectors, and green consumerism is provided with social change concerns observed. Chinese study distinctiveness is included in this evaluative framework. The paper concludes with an overview of the limitations of this study and proposals for future research.

2. Background

China's environmental issues have become globally critical. Recent studies show that China will be facing significant environmental burdens along with numerous development opportunities (Geng et al., 2013). China is regarded as an integral dimension of the world's supply chain and consumer market. Development of green marketing concepts and practices can aid and involve joint efforts from all stakeholders. These development activities can also potentially improve China's economic positioning while reducing environmental degradation.

In this section, environmental issues in China, along with general green marketing definitions are introduced.

2.1 Background in China

In the year 1978, the Chinese government launched an economic policy called the “Open Door” policy. Large amounts of foreign investments flowed into China with recent economic growth averaging around 10% annual increase during this period (Ji et al., 2014). The “Open Door” Policy raised China’s economic transformation and development to new levels. However, it also caused a series of environmental issues. Environmental issues, such as resource depletion, deforestation, coastal reclamation, desertification, climate change, pollution (water, air), and energy overuse, are all evident in modern China (Wu et al., 2015). These issues risk China’s economic sustainability, public health, social stability and international reputation.

During this period, there has been an increase in governmental environmental regulations, yet China’s environmental performance has remained in decline (He et al., 2012). Consumer environmental knowledge has only started to emerge with differences in environmental attitudes evident (Yu, 2014). This variation represents an unequal level of consumer knowledge and social education with respect to environmental attitudes, behaviors and awareness of environmental regulatory policies. These poor government-consumer dynamics are part of the reason for the slow progress in the Chinese green movement. But this situation is expected to change, as government enforcement and consumer knowledge increase. Chinese corporations and organizations are already feeling these regulatory, consumer and supply chain pressures internationally (Grumbine, 2014). They will have to respond to these emergent domestic pressures. For example, one of China’s first global brands, Haier, a major appliances manufacturer, is helping to lead on green industrial practices. In 2008, it established a new identity as an Olympics green sponsor, building its green image with co-sponsorship of a major global sporting event. Haier made a public commitment to environmental sustainability and energy efficiency, and marketed this effort (Watts and Noh, 2014). Lenovo, a major electronics

manufacturer, also committed partake an environmental leadership marketing stance in its business activities, from selecting materials to product design and recycling solutions. Some Chinese companies, such as Broad Air Conditioning have strong environmental philosophy that also permeates its marketing efforts. One of their major marketing considerations was to seek entry into a non-green product market of electrical air conditioning and decided against such a measure (He et al., 2004). These examples show that in many organizations throughout China they are either building or have maintained a strong green culture. Understanding these markets from a consumer and corporate marketing perspective is of practical importance.

To broadly address the economic and environmental burden coupling, organizations may wish to adopt new environmental practices (Yu et al., 2013). As companies adopt these practices, green marketing initiatives will escalate.

2.2 Green Marketing and Consumerism Background

2.2.1 Green Marketing

In 1975, the American Marketing Association introduced the term green marketing via a workshop on “Ecological Marketing”. Green marketing has also been called environmental marketing, ecological marketing, social marketing, and sustainability marketing. It is a broad concept with three key components (Polonsky, 1994): 1) it is a subset of marketing; 2) it evaluates both positive and negative activities; and 3) it examines a range of environmental issues. This conceptual definition is only one of many for green marketing. Other conceptualizations include:

- Commitments by organizations focusing on environmentally friendly products and services (Kinoti, 2011).

- Utilizing the 4P's (product, price, place, promotion) to not cause any damage to the environment (Dibb et al., 2005).
- Marketing managerial processes responsible for requirements of customers and society in a profitable and sustainable way (Peattie, 2001).

There is no universal definition of green marketing and its dimensions. Although a common element within the definition is explicit inclusion of environmental awareness in marketing management.

2.2.2 Green Consumerism

Green consumers are consumers who prefer products that are not likely to endanger human health or damage the environment (Tekade & Sastikar, 2015; Xie et al., 2014). In this study, green consumerism is conceived as a broader concept than green consumers. Green consumerism includes a broader social awareness of green consumer behaviors, where green consumers are the main drivers of green consumerism. Green consumerism can be regarded as green self-identity (Sparks, 1992). Three typical statements of green consumers are, first, "I identify myself as someone who is concerned with 'green/environmental issues'", second, "I purchase and consume green products", and third, "I perceive my lifestyle as 'green'". These elements are typical green consumerism scales. It is within this context that we separately investigate green consumerism, although it may be interrelated with the broader green marketing umbrella, individual practices and behavior rather than corporate drivers are characteristic of green consumerism.

2.2.3 Previous Literature Review Research

In this paper, green marketing is the integration of environmental issues into corporate marketing strategy, especially the 4P's, and green consumerism. Literature reviews of green marketing and green consumerism exist (Peattie & Crane, 2005; Nill & Schibrowsky, 2007; Chamorro et al., 2009; Leonidou & Leonidou, 2011; Verain et al., 2012; McDonagh & Prothero, 2014). Table 1 summarizes these existing green marketing and green consumer literature reviews. The positioning of this study is clearly stated: (1) peer reviewed journal publications, (2) Green Marketing and Consumerism; and (3) China. In these literature reviews, international and cultural comparisons or critiques are limited. This paper begins to fill this gap by emphasizing the green marketing literature and green consumerism in China, an emerging economy. Note that although general green marketing reviews have found a large number of papers (530 for Leonidou and Leonidou, 2011), China, arguably the world's largest potential market, has not been analyzed. A comparative analysis of cross-cultural dimensions has been not been covered in these other literature reviews, emerging economies are not mentioned in these other reviews.

[Table 1 about here]

3 Research Methodology

The methodology in this paper is a structured literature review of publications in peer reviewed academic journals. A structured literature review is defined as a systematic, explicit, and reproducible design for identifying, evaluating, and interpreting the existing body of recorded documents (Fink, 2013).

This paper applies the process identified in Figure 1 in these 4 steps (Mayring, 2015):

1. Material collection: identify a list of scientific journals. A bibliographic search is conducted by using key words and established electronic bibliographic database systems.

This listing was cross-validated by two researchers separately. Any disagreements were then discussed and reviewed and an agreement was reached.

2. Descriptive analysis: assess the material aspects, e.g., the distribution across the time period.
3. Category selection: identify structural dimensions and related analytic categories, used as the literature review structure covering various analytic categories.
4. Material evaluation: analyze sample of research according to the categories identified from the previous steps. Determine main issues, overview of results and discussion of future research direction.

[Figure 1 about here]

Google Scholar was used as a search engine. Google scholar is a comprehensive bibliographic electronic database which incorporates a wide variety of publication outlets including peer reviewed journals, book chapters, working papers and conference proceedings. Only peer reviewed journals were selected to appear in the final dataset of this study.

The following keywords were used: green marketing, ecological marketing, environmental marketing, sustainable marketing, green product, green price, green place, green promotion, green communication, green consumer, green consumerism, green consumption, ecological consumer, environmental consumer, and China. We only include mainland China and the Hong Kong region.

In total a database of 52 publications were found. A descriptive summary of journals and publications is provided in the next section. A conceptual framework shown in Figure 2 will guide remaining evaluation of the literature after the descriptive analysis. Figure 2 shows there

are various triggers and general environmental context that influence the relationship between marketing strategy and green consumerism. General triggers include regulatory governmental influences, competitive pressures and market opportunities. Marketing strategies are based on the 4P's: product, place, price and promotion. Green consumerism is evaluated on international comparison, demographic and psychographic dimensions. The broader environmental context includes culture, industry, socio-economic and political issues.

[Figure 2 about here]

The dual directional arrows between Marketing strategy and Green consumerism represent an interaction between the organization and consumers within a green marketing context. Marketing strategies are based on the 4P's, product, place, price and promotion¹. These marketing strategies will have an impact on greening consumers and perception (one direction of the arrow). Alternatively, marketing strategy will be influenced and respond to various green consumerism characteristics.

Under the green context, marketing strategies were defined respectively by the 4 green Ps of "green product", "green price", "green price", and "green promotion/advertising". These were some of the more popular dimensions exhibited in the literature. They are essential parts of marketing strategy and thus are incorporated as circles in the conceptual model. Green consumerism is evaluated using social aspects such international/intercultural comparisons, demographic and psychographic dimensions in this paper.

¹ There have been other marketing dimensions that focus specifically on environmental and sustainable marketing, such as the four-R's model (Redirection of customer needs, Reconsumption, Reorientation of marketing mix, Reorganization) (Sheth and Parvatiyar, 1995). Although models such as these are valuable for understanding some aspects of green marketing, using the more established and widely accepted 4P's model will allow for easier understanding for non-green researchers and practitioners. The 4Ps marketing strategy mix perspective was the primary categorization used within the literature identified in this study.

The broader competitive environmental context and triggers include culture, industry, socio-economic and political issues that may be China specific, these are the dashed box elements within Figure 2.

Furthering the influencers identification, general external (and some internal) triggers of green marketing issues in China include regulatory governmental influences, competitive pressures and market opportunities. These triggers are pictured as external triggers and influences beyond the direct consumers. The derivation of these triggers, including green consumerism forces, arises from the literature and particularly institutional and stakeholder theories (Bai et al., 2015). In institutional theory the three major ‘isomorphic’ forces that cause organizations to adjust their strategies, which include marketing strategies come from groups of stakeholders including governmental stakeholders (regulatory pressures), competitors (mimetic pressures) and consumers/employees/communities (normative pressures).

4 Descriptive Analysis

The descriptive analysis in this section includes a time series frequency evaluation of research publications from 1999 to 2015. Figure 3 shows the frequency of publications over three stages. In stage one, from 1999 to 2007, the research on green marketing in China had seen few studies with slightly over one publication per year. It was during this time that China joined the World Trade Organization (Paradise, 2015). Environmentalism from a regulatory and consumer perspective was growing as economic growth caused environmental burdens (Ho & Edmonds, 2007).

The second stage from 2008 to 2012 witnessed an average of 6.2 articles per year. The number of publications (9) reached its peak in 2011. The growing awareness of environmental

issues from Chinese citizens and corresponding promotional practices on social responsibility in the corporate world may have further caused this interest (Cheng et al., 2015; Qu et al., 2015). For these papers, eight out of nine investigate broader sustainable strategies with an emerging topic of green supply chain management (GSCM). These more general GSCM papers are included in the study because a significant portion of these studies integrates green marketing.

For 2012 to 2015, research publication drops off. A potential explanation for this decline is a shift in practical corporate concerns due to the “Great Global Recession” beginning in 2008. During this period organizational concerns were financial and China’s total investments in industrial pollution control peaked in 2007 decreasing until 2011 (Wu et al., 2015). This shifting focus may have also been reflected in academic research, due to lack of interest by government and organizations. The delay of publication time resulted in a lagged publication impact, where the decline of research in 2008 showed a publication decline in 2012. Whether this topic is faddish in China remains to be seen. But given an eventual global economic recovery, greater Chinese globalization, and affluence, the forecast seems very likely that growth in green marketing at the industrial and consumer level is bound to continue.

Table 2 summarizes the journal outlets and topic categorizations for the publications. There are three journals that represent a relatively high number of China’s green marketing research publications between 1999 and 2015: *Journal of International Consumer Marketing* (6), *Journal of Consumer Marketing* (4), and *Journal of Cleaner Production* (3). A total of 52% mention general green topics, such as the green concept, eco-development principles, and broader corporate strategies in sustainable management in China. While, 87% are China green marketing specific. Of this latter group, 64% are green marketing mix, 4P (product, price, place, promotion) focused and 61% are green consumerism related. Further definition of these sub-

topics is discussed in the next section. The research on green marketing and consumerism in China is still within the broader domain of corporate sustainability, and more field specific investigation is likely to occur in the future, as the foundation has been set.

[Figure 3 about here]

[Table 2 about here]

5 Green Marketing and Consumerism in China

This section begins with a specific analysis related to triggers of green marketing in China, which include governmental, competitive and opportunistic issues. These triggers and antecedents provide possibilities to identify future trends in research direction, based on previously published works. Next the green marketing mix represents the core marketing strategic categories that will be used to evaluate the literature. Further, an inter-sector industry review and green consumerism in China complete the literature review analysis.

5.1 Triggers of Green Marketing

Across the past 16 years, green revolution, green consumption, environmental protection, and sustainable economic development appear frequently in China's media and public discourse (Yang & Calhoun, 2007). Organizations are attuned to this discourse and have integrated various aspects of the natural environment as a marketing tool. Other organizational triggers for green marketing adoption also exist. Some of these have been theoretically analyzed through such organizational theories as institutional and legitimacy theories (Bai et al., 2015). Three main triggers have been identified in this literature set, governmental, competitive and opportunistic. Although these are three separate triggers, they are related and overlap.

5.1.1 Governmental Policy

In China, the government plays the most significant role in social and economic development. The Chinese government has modified its environmental and sustainable development legislation in five ways (Zhang & Wen, 2008):

- Systemize from environmental protection to comprehensive sustainable development and management
- Shift environmental management focus from pollution control to ecological conservation
- Transition from end-of-pipe treatment to source control
- Change standalone projects to regional activities
- Modify regulations from governmental command and control to voluntary and market mechanisms

Chinese governmental regulations relating to environmental marketing have been initiated to protect consumers including ensuring consumers' right to know about product components and labels (Chan, 2001; Chan & Lau, 2000). For example, eco-labelling programs, such as China's Green Watch program (Liu et al., 2012), originated from governmental initiatives. These corporate social responsibility information mechanisms are government supported programs that can influence organizational marketing and communications (Marquis & Qian, 2013).

5.1.2 Competitive Pressure

Facing increasing pressures from non-governmental organizations (NGOs), Chinese and global governmental institutions, environmentalists, Chinese green consumers, industrial competitors and other stakeholders, many Chinese enterprises have adopted green practices in

their marketing strategies (Lu et al., 2015; Zhang et al., 2008). These stakeholders also represent additional competitive pressures that are market based. For example, NGOs may cause organizational reputations to worsen, impacting future sales and revenue.

Chinese companies have increased desire to maintain their competitive positions by initiating environmental management measures (Holslag, 2015). These Chinese companies feel international environmentally-oriented supply chain pressures that have implications for their market share. For example, automobile companies have asked their Chinese suppliers to adopt ISO14001 environmental certification (Zhu et al., 2007). ISO 14001 certification may also be a signal to the market that organizations are serious about the environment (Qi et al., 2011). Chinese organizations have utilized this certification for industrial marketing purposes but it can also be valuable for consumer markets. Reputational and legitimacy, normative issues may be addressed through the environmental practices adoption.

Competitive pressures may also arise from industry benchmarking. Enterprises observing competitors' sustainable behaviors will also attempt to emulate similar behaviors to show their social responsibility. This mimetic institutional pressure causes the entire industry to modify production processes and reduce the detrimental environmental behavior. Thus some green marketing initiatives by leading companies may encourage competitors to follow suit.

5.1.3 Market Opportunity

This trigger is similar and related to the previous triggers for green marketing. The difference lies in organizations being first adopters or taking a proactive stance to gain market share or penetrate new markets (Forsman, 2013).

Chinese organizations can take advantage of these market opportunities. Many Chinese companies are unwilling or incapable of providing materials and products that meet foreign companies' environmental requirements. Thus, investments and foresight from organizations can help develop the necessary green capabilities and resources to build markets (Bigliardi et al., 2012). This trigger is most closely aligned with the resource-based view and dynamic capabilities theories (Chen and Chang, 2013).

5.2 Green marketing mix

The marketing mix strategy approach is a traditional marketing management tools. Marketing mix consists of the 4Ps: product, price, place and promotion (Yudelson, 1999). It is a practical categorization used by marketers.

All papers (n=38) associated with green marketing mix are discussed and summarized in Table 3. These categorizations are based on publication content analysis where the research team identified the most appropriate 4P category. Many publications can be put into multiple categories.

[Table 3 about here]

Table 2 shows the 4P category and number of papers in that category with descriptive content presented. The analysis briefly presents business practices in China, literature limitations, and future research directions.

5.2.1 Product

Green product development addresses environmental concerns in green design and green innovation throughout the product-related stages (Schuhwerk & Lefkoff-Hagius, 1995; Chen and

Chang, 2013). Green products can be green for multiple reasons, including being manufactured or used in a green way. For example, products that are made from recycled materials are green-manufactured; and green cars are green because of their application.

The literature shows that Chinese green customers' preferences for green product attributes include energy, water, and cost savings, or organic and green chemicals usage. The 12 green product journal publications mostly focus on product eco-design and R&D improvements. The literature also target governmental programs that encourage the launch of eco-labeling programs, the introduction of green and organic food certification, environmental standard for product production, and final product standards.

Although these papers are categorized into the product category, their major perspective within the papers is broader. Actual papers that focus only on green products and their marketing in China are limited. This observation is also true for the other 4P categories. Most of the literature focused on best practices descriptions. Research on marketing and environmental outcomes for green products is limited.

Another limitation is the narrowed focus on green packaging. This research can extend to product stewardship aspects and the extended product life cycle. Packaging material selection, resource reduction, reuse and recycling can all be more carefully investigated.

5.2.2 Price

Pricing for green products in China is one of the least investigated topics with only one journal publication in this review. Pricing strategies are important for revenue generating. It is the only 4P strategy that is revenue based. There are numerous pricing strategies for organizations such as penetration, skimming, bundle, and premium pricing (Kotler & Armstrong,

2010). The only paper categorized for pricing focuses on corporate purchasing practices. There are some papers categorized in the consumerism section that may fit here, such as willingness-to-pay issues of individual consumers. Sales pricing investigations to industrial Chinese customers are nonexistent. There is significant room for study on various pricing strategies for green products and services in China.

Topics for further investigation may include Chinese industrial and individual consumer willingness to pay premium pricing for green products. Another issue is integration of ecological externalities into pricing. This may be accomplished through the consideration of life-cycle pricing (Grimmer et al., 2015). The Chinese situation may provide distinctive pricing strategy research results due to unique environmental, geographic, and socio-political context.

5.2.3 Place

Place is typically associated with distribution channels and facility location. Place refers to providing products for easy access and includes intensive, selective, or exclusive distribution and franchising (Kim, 2002). China's green place research is centered on green logistics and the relationship between green logistics management and business performance. Green logistics and distribution has incorporated carbon and environmental footprints into distribution planning (Fahimnia et al., 2015a). How various distribution strategies from a marketing perspective relate to green issues is very limited in Chinese green marketing.

Green retailing and corresponding regional retail management issues are missing (Kumar, 2014). Research can be completed on how firms decide where green consumers live, the relationship between green consumerism and the green retailing system, and retail outlets size

and geographic location management. Industrial green distribution strategies in China, other than logistics and materials movement, require further investigation.

5.2.4 Promotion

Marketing promotion represents organizations' seeking to build brand knowledge and corporate awareness. Promotion strategies include advertising, public relations, personal selling, viral advertising and communication between the organization and customers. Companies green their promotion methods by targeting certain customer segments with specific green value propositions.

Based on the 22 papers analyzed for promotion, 8 papers study the influence of green policies on organizations' green performance and its relationship to communication between organizations and their customers. Environmental management policies that influence China's promotional aspects include green labeling, ISO14001 certification, and the green watch program. These programs may not exactly be promotional activities of organizations, but they indirectly influence their communication message. These programs represent signals to the market on organizational environmental performance and may be promoted to industrial and consumer markets.

Green advertising in China is still in its early development stages with some focus on green consumers. More research on promotional message effectiveness and green customer education can be expanded in future studies. Focusing on the downstream supply chain may enhance customer relationship management where green promotion may play a role.

5.3 Industrial Sector Overview

In this section, an overview of the green marketing business practices across China's industrial sectors is presented. The overview will include a comparative analysis of these practices, limitations and future research directions.

The essence of China's industrial policy has not been completely changed to address environmental issues and green practices have been inconsistently implemented across various industrial sectors. Table 4 summarizes the past and present industrial practices across China's industrial sectors in terms of green marketing and development. In Table 3, only papers that directly investigated an industrial sector(s) are included.

[Table 4 about here]

The Global Industry Classification Standard (GICS) is used as the industrial sector breakdown. GICS is an industry taxonomy developed by MSCI and Standard & Poor's (S&P) for use by the global financial community². All papers (n=19) that mention a specific industrial sector or compare industrial sectors are included in our analysis.

Of the 19 papers found, there are 48 separate investigations of some industrial sector. The frequencies of industrial sector reference based on percentage are shown in Figure 4. Not surprisingly, for the green marketing literature, large percentages are focused on consumer staples (44%) and discretionary (21%) industries. Consumer products are typically marketed to individual consumers who may be more sensitive to environmental concerns when compared to industrial markets and corporations. Industrials and materials represent the second largest groupings. Organizations in these industries may be more environmentally sensitive, for example, materials would include extractive industries and mining which cause severe environmental

² More details about GICS can be found at <http://www.msci.com/products/indexes/sector/gics/>

burdens. Surprisingly, the energy industrial sector is not well-represented in Chinese green marketing research, although in general green energy markets have seen significant investigation (e.g. Harmon and Cowan, 2009). It is surprising because of the climate change impact and the advent of renewable energy products and industries.

[Figure 4 about here]

Some industries have not been mentioned within this review, but it doesn't mean that research on environmental issues facing these industries in China is nonexistent. This review focuses on green marketing efforts and research. For example, information technology, financial industries have not been mentioned in this research but have seen significant investigation in broader studies (Wei et al., 2015; Zhu et al., 2015).

Table 4 shows an imbalance of coverage within these industrial sectors exists. Especially notable is the consumer discretionary industrial sector where media and retailing subsectors have seen no investigation. From a subindustry perspective, China's food industrial sector has witnessed significant research. Specifically the adoption and the acceptance of organic food is well represented. Other proactive ecological activities have taken place in this subindustry, such as the eco-labeling program, food safety assurance systems and the green watch program.

Numerous opportunities for future research and development exist. There are a number of industrial sectors in China that have not been investigated in terms of green marketing practices. This major gap could be filled in. The comparison of green marketing dimensions and their adoption levels across industrial sectors in China is a fertile area of research. Part of these studies may include green marketing maturity stages for each industrial sector to have benchmarks for various stakeholders.

5.4 Green Consumerism in China

Green consumers are defined as consumers who prefer products that are not likely to endanger human health or damage the environment (Tekade & Sastikar, 2015; Xie et al., 2014). The focus in this section is on individual or household consumers, industrial consumers are not considered.

Much of the green movement is driven by consumers, who then make their needs known through the supply chain, helping to green the supply chain and markets (Brindley & Oxborrow, 2014; Grunert & Grunert, 1993). In China, there have been some studies, albeit limited, on consumers' environmental attitude-behavior and relationship to the green marketing concept.

In the next three subsections, we first introduce how the literature compares Chinese green consumers with international consumers, then research related to demographic segmentation and psychographic segmentation within China appear in the remaining subsections.

5.4.1 International Comparisons

For this international comparative analysis in green consumerism, a comparison between green consumerism in China and other countries is discussed. This evaluation relies on seven of the 52 identified papers, of which five major countries or regions were found, the U.S., Canada, Europe, Brazil and Hong Kong.

One way to evaluate how China compares to other regions is to use a maturity model for green consumerism and beliefs. The four stage maturity model used for this comparison is from Kokkinen et al. (1999). In the first stage, consumers are concerned about unfavorable changes in their surroundings and threats to human health and seek to acquire green knowledge and corresponding solutions. In the second stage, as people's environmental knowledge improves,

some consumers transform their concern to a sense of social responsibility and national well-being. Environmental initiatives gradually become part of people's daily life. In the third stage green issues are identified as global concerns by both consumers and their nations. Consumers in this stage not only focus on their own country and citizens, but focus on international greening efforts of corporations. In the fourth stage, environmental awareness and green practices are transformed into habitual behaviors and institutional norms. People believe in a biocentric perspective of the man-nature relationship.

Using this maturity framework, the literature and comparisons amongst countries and China based on green consumers is shown in Table 5. Table 5 shows that Chinese consumers' green attitudes are between stage one and stage two. Although still in its infancy, the green movement is emerging as an element of consumers purchasing behaviors and habits in China (Chan, 2008; Thøgersen & Zhou, 2012a) (Eze & Ndubisi, 2013). Chinese green consumerism lags behind its counterparts from more developed regions in the world.

[Table 5 about here]

Overall, more research on comparative international green consumerism in China is needed. The existing research is relatively exploratory where samples and sample sizes are restrictive. It is not clear if these samples are truly representative of complete cultures and nations' green consumerism attitudes. Country variables in these studies could be more robust in the factors considered. For example, certain characteristics ranging from governmental policies to historical socio-cultural dimensions are ignored.

Future research needs to expand the national and regional scope of studies. Close geographical regions such as Japan, India and South Korea may be good comparative areas to

study. The scope can also be expanded to developing countries that have similar economic concerns. A gap analysis based on green consumerism is needed to identify how well China compares to other countries. In this paper, a maturity framework was used, but a more nuanced and analytical set of metrics is needed. Broad and comprehensive studies of regions throughout China have not been completed.

5.4.2 Demographic Segmentation

Worldwide research on demographic variables of green consumers shows that green consumers are young, female, married, with high education and income (Gilg et al., 2005; Hines et al., 1987). In recent years, green consumers and sustainability have received significant attention from the government, public and mass media in China. Chinese green consumerism studies confirm the general research perspective. Although, from the papers in this review, there are some slightly differing results with variations in their conclusions. For example, in one study (Shields & Zeng, 2012), the finding showed that men were more environmentally concerned than women. These types of demographic inconsistencies may derive from study and sample design characteristics. A summary of the demographic findings from the eight identified papers focusing on green consumerism in China are shown in Table 6.

[Table 6 about here]

The demographic profile of Chinese green consumers in Table 6 can be summarized as:

- The gender difference in environmental preference is ambiguous.
- Chinese married couples are more active in green practices
- The mean age of committed consumers is 25 in China
- A positive relationship between green attitudes and individual education level exists

- Higher income consumers are more knowledgeable of green issues
- Environmental consumers enjoy higher positions in the corporate world.

For the publications identified in this study, issues of sampling bias do arise. Most of the identified studies used samples from Hong Kong and China's "first-layer" cities: Beijing, Shanghai and Guangzhou. The samples represented relatively small numbers of respondents from mostly urban areas. Results show consumers in these cities are more willing to participate in green initiatives than consumers of other cities in China. Reasons for this relatively greater participation include more proactive Chinese government environmental strategies and enforcement, a higher average education and income level, and the availability of green products in these three most developed yet polluted cities. Research with consumers in "second-layer" and "third-layer" cities, as well as the undeveloped areas in West China is relatively limited. Only three publications focus on these regions. Research of green consumer attitudes and practices in China's developing cities and their undeveloped areas need investigation.

In this published work, issues such as income variations over time, for example improved income growth, may cause different results. In addition to demographic factors identified in this study, other demographic factors such as religion, average family size and average marriage age could also be investigated. More comprehensive research on male and female responsiveness to green initiatives is also required.

5.4.3 Psychographic Segmentation

Psychographic variables may include attitudes, behaviors and concerns of individuals (Zhao et al., 2014). In addition, cultural factors such as individualism and collectivism may also be categorized as psychographic variables (Xue, 2015). One study found that psychographic

variables have greater explanatory power than demographics variables in terms of Chinese green consumer behavior (Zhao et al., 2014). Single psychographic factors or combinations of them can result in different consumer behaviors with respect to green activities. Different groups of individuals who share the same or similar psychological factors may form behavioral segments within the context of sustainable lifestyle. Therefore, investigation of psychographics is important in Chinese green consumerism studies.

Market segmentations of green consumerism in China have not been well-developed and validated on a broader level. For example, marketing strategies require considering a spectrum of green consumer segments ranging from non-environmentally focused to very green consumers (Ginsberg & Bloom, 2004). One segmentation categorization includes the range true blue greens to basic browns from the Green Gauge Report (Doane & Abasta-Vilaplana, 2005). Building on this consumer segmentation category, five consumer segments were identified in one of the early and only studies in China. These segments included 1) Basic Greens, 2) Sprouts, 3) Eco bystanders, and 4) Basic Browns (Chan, 2000).

Unlike the Green Gauge segmentation which has the highest environmental level of true blue green, the highest level in China is basic greens. Basic greens are the most environmentally-conscious consumers in China but are ineffective in green practices. Sprouts share a modest level of general environmental concerns and are the most promising green consumers. They have a relatively high potential of translating their pro-environmental attitudes to corresponding consumers' behaviors. Eco-bystanders are inadequate in environmental knowledge and they admit most of their ineffectiveness in environmental protection. Basic Browns are the least environmentally-conscious consumers. Based on this literature review's results, there are a large proportion of eco-bystanders in the current Chinese market.

Explicit investigation of psychographic-specific characteristics and green consumerism was only evident in two publications (Chan, 2000; Zhao et al., 2014). These topics could use future development. For example, categorizations of psychological influences on green consumption (Gilg et al., 2005) may be interesting directions for future research on Chinese green consumerism. Further scale developments and validation on psychographic dimensions are needed.

6 Conclusion

China has faced significant economic growth and social change over the last three decades. With this growth has come commensurate ecological degradation. China's government and its people are putting social and other pressures on corporations to green their processes and products. Ample opportunity exists for organizations to respond to these pressures and build competitive advantages. Marketing strategies that forecast and incorporate green dimensions and identify green consumer characteristics are necessary for organizations to improve their market positions in China.

This paper fills a niche to help researchers and practitioners understand the state-of-the-art on this topic, but also consider future directions for research and practice. The findings, overall, show significant need for additional research and adoption of green marketing and consumerism practices in China. Findings included a total of 52 peer reviewed journal publications that focused on Chinese green marketing or green consumerism practices. Given the overall growth in sustainability and green business research over the years, now numbering in thousands of studies (Fahimnia, et al., 2015b, for example) this small number of studies exemplifies the paucity of research on this topic. Of the papers found in this study, a large fraction focused on more general and non-marketing issues such as green operations and supply

chain management. Thus, even fewer papers had a direct and exclusive focus on green marketing and consumerism. These findings indicate that Chinese green marketing and environmentalism transformation is still at an early stage.

Specific findings and indications for future studies from the literature include: 1) Research on marketing and environmental outcomes for green products needs to go beyond best practices descriptions and the narrowed focus on green packaging; 2) Green pricing and premium modeling investigation is required at industrial and consumer levels; 3) Research on promotional message effectiveness and green customer education can be expanded in future studies to enhance customer relationship management; 4) The comparison of green marketing dimensions and their adoption levels across industrial sectors in China is a fertile area of research; 5) Research on comparative international green consumerism in China is needed; 6) Internal green consumerism within China needs to go beyond first-layer cities; and 7) More comprehensive research using broader demographic and psychographic variables and scales will benefit future research on green consumerism in China.

One of the distinctive characteristics of this China study lies in the fact that the Chinese government has a major role in mainstreaming green marketing innovation and sustainable management. Why and how the Chinese government can help companies integrate environmental sustainability remains to be further studied. The Chinese government in its own green marketing effort could continue to raise public awareness of environmental issues.

Practically, this study provides organizations with findings related to green marketing strategies, green consumer demographic and psychographic characteristics. Potential future directions and issues that need to be managed by these organizations can also be gleaned from

this study to help them with their own green marketing strategies. Researchers will find this work valuable in identifying gaps and future research streams that need investigation.

Although this study meant to be comprehensive and exhaustive, there are ample opportunities for further study and understanding of Chinese green marketing and consumerism. This study was limited to only peer reviewed journals. Books, conference proceedings and proprietary studies may provide greater breadth and depth to understanding the state-of-the-art on this topic. The categorizations in this study are relatively generic, more advanced categorizations and their relationships provide opportunity for new theory development. For example, this paper did not delve into methodological categorizations or bibliometric co-citation-like analysis to offer additional research direction. Another methodological limitation of this study is the industrial sector analysis which is based on the GICS. There are other industry categorization standards that could be applied.

The limitations of this study also provide additional opportunity for research directions. Overall, the field of green marketing and consumerism is still relatively young, and research on this topic in China is even more emergent. This paper only focuses on green issues in China. Extension of this work may incorporate broader issues around ethical marketing, societal marketing, moral marketing and sustainable marketing in China. Also current research of green marketing has proposed “4R” (Redirection of customer needs, Reconsumption, Reorientation of marketing mix, Reorganization); however very limited research has been conducted focusing on China using the 4R perspective. This paper sets a foundation and direction for future research on this critically important topic for the well-being of individuals, organizations, communities, and this world.

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Figure 1: A graphic flow process diagram of the structured literature review methodology used in this study

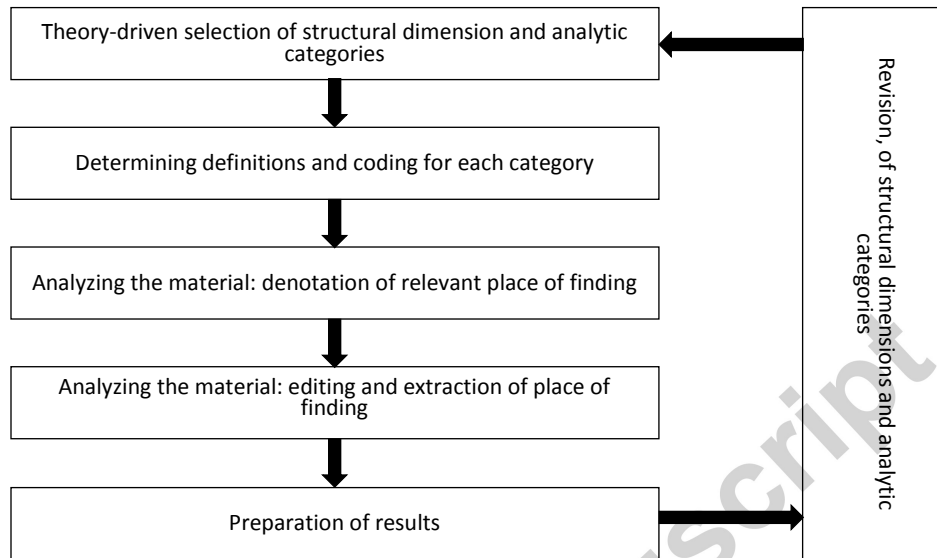


Figure 2: A conceptual framework for evaluating green marketing and consumerism literature

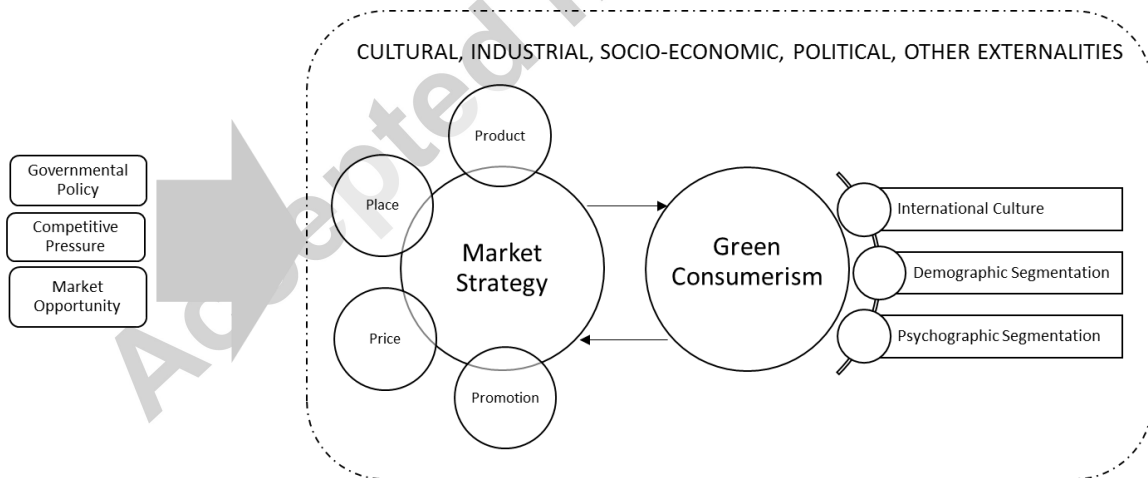


Figure 3: Evolution of number of articles over time

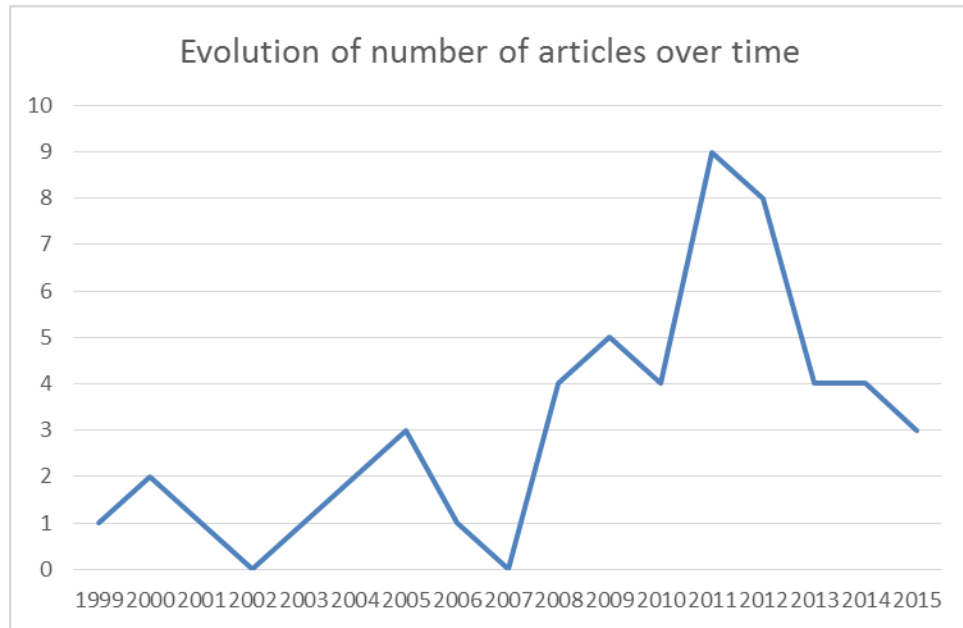


Figure 4: Allocation of papers in each industrial sector based on percentage frequency

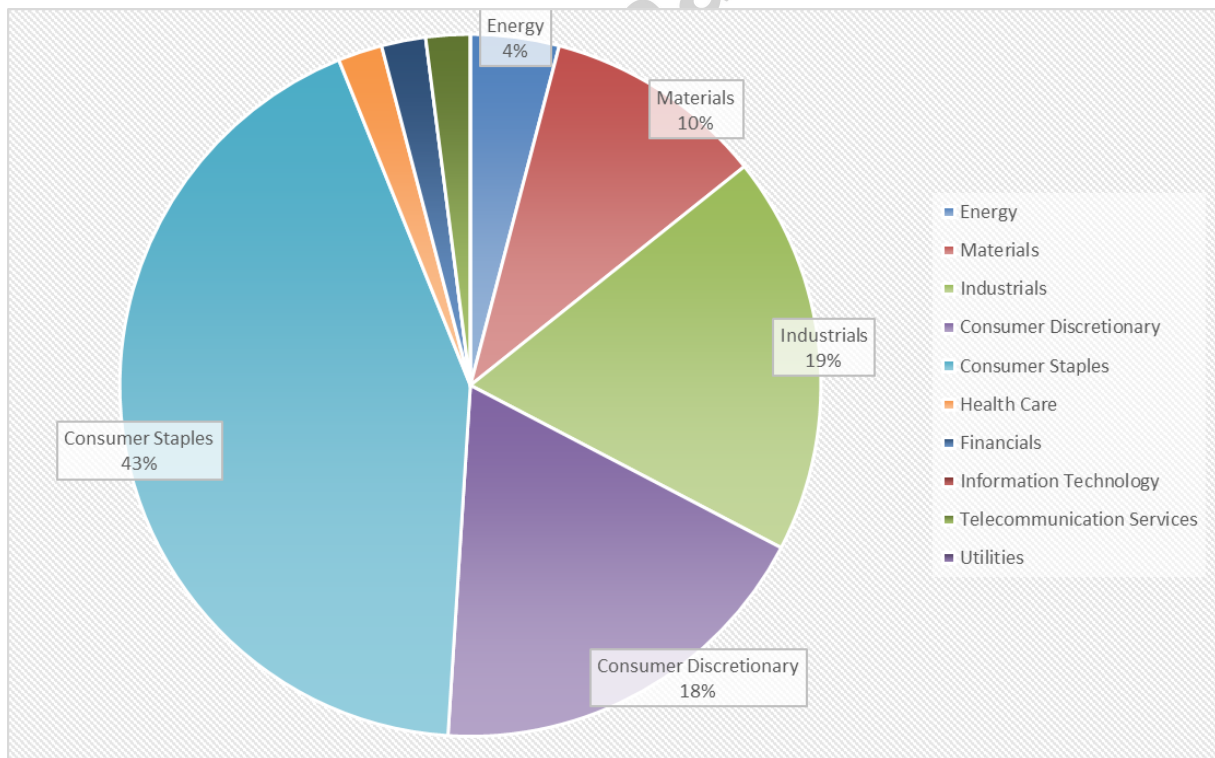


Table 1: Previous Literature Reviews on Green Marketing and Consumerism

Author(s) and Year	Time Horizon	Number of reviewed papers	Type of paper reviewed	Concepts					Scope of Analysis
				Green/environmental/ecological Marketing	Sustainability/sustainable marketing	Ethical Marketing	Green Consumers	Green Consumerism	
(Peattie & Crane, 2005)	1970 - 2005	NA*	NA	✓	✓		✓		Global
(Nill & Schibrowsky, 2007)	1981 - 2005	421	Peer-reviewed Journals			✓			Global
(Chamorro et al., 2009)	1993 - 2003	112	Peer-reviewed Journals	✓			✓		Global, mainly U.S
(Leonidou & Leonidou, 2011)	1969 - 2008	530	Peer-reviewed Journals	✓					Global
(Verain et al., 2012)	1995 - 2009	16	Peer-reviewed Journals						Global
(McDonagh & Prothero, 2014)	1998 - 2013	NA	NA		✓		✓		Global
THIS PAPER	1978 - 2015	52	Peer-reviewed Journals	✓				✓	China

**Note: Some reviews did not provide a quantitative count of papers, but only focused on qualitatively reviewing the literature.*

Table 2: List of Journals and Research Topics

Journal	Total	General Green Categories				Green Marketing Specific Categories			
		Concept and Principles		Boarder Sustainable Strategy		Marketing Mix (4P)		Green Consumerism	
African Journal of Business Management	1	0	0%	1	5%	0	0%	0	0%
American Journal of Agriculture Economics	1	1	11%	0	0%	0	0%	1	4%
Asia Pacific Journal of Marketing and Logistics	1	0	0%	0	0%	1	3%	1	4%
Building and Environment	1	1	11%	1	5%	0	0%	0	0%
Business Horizons	1	1	11%	0	0%	0	0%	1	4%
China & World Economy	1	0	0%	1	5%	1	3%	0	0%
Ecological Economics	1	0	0%	1	5%	1	3%	0	0%
Environment and Behavior	1	0	0%	0	0%	0	0%	1	4%
Environmental Impact Assessment Review	1	1	11%	1	5%	1	3%	1	4%
Food Control	1	0	0%	1	5%	1	3%	0	0%
Food Journal	1	1	11%	1	5%	1	3%	1	4%
Food Quality and Preference	1	0	0%	0	0%	0	0%	1	4%
International Journal of Business and	1	1	11%	1	5%	1	3%	1	4%
International Journal of Operations &	1	0	0%	1	5%	0	0%	0	0%
International Journal of Production Economics	1	0	0%	1	5%	1	3%	0	0%
International Journal of Production Research	1	0	0%	1	5%	1	3%	0	0%
International Journal of Services Technology	1	0	0%	0	0%	1	3%	1	4%
International Marketing Review	2	0	0%	1	5%	1	3%	1	4%
Interntaional Journal of Hospitality	1	1	11%	0	0%	1	3%	0	0%
Journal of Business Ethics	1	1	11%	0	0%	0	0%	0	0%
Journal of Business Management and	1	0	0%	1	5%	1	3%	0	0%
Journal of Cleaner Production	4	0	0%	2	10%	2	7%	1	4%
Journal of Consumer Marketing	3	0	0%	0	0%	0	0%	3	11%
Journal of Engineering and Technology	1	0	0%	1	5%	0	0%	0	0%
Journal of Environmental Management	1	0	0%	1	5%	0	0%	0	0%
Journal of Environmental Planning and	2	0	0%	1	5%	2	7%	1	4%
Journal of Environmentaol Management	1	0	0%	0	0%	1	3%	1	4%
Journal of International Consumer Marketing	6	1	11%	0	0%	3	10%	4	15%
Journal of Marketing Management	1	0	0%	0	0%	0	0%	1	4%
Journal of Services Marketing	1	0	0%	0	0%	1	3%	0	0%
Management of Environmental Quality: An	1	0	0%	0	0%	1	3%	1	4%
Marketing Intelligence & Planning	1	0	0%	0	0%	1	3%	1	4%
Omega	1	0	0%	1	5%	1	3%	0	0%
Production Planning & Control: The	1	0	0%	1	5%	1	3%	0	0%
Psychology & Marketing	2	0	0%	0	0%	0	0%	2	7%
Science Communication	1	0	0%	0	0%	1	3%	1	4%
Social Science Quarterly	1	0	0%	0	0%	0	0%	1	4%
Technological Forecasting & Social Change	2	0	0%	1	5%	2	7%	0	0%
Grand Total	52	9	100%	21	100%	29	100%	27	100%

Table 3: Summary of Identified literature categorized into 4P marketing mix dimensions

Category	Number of Papers	Paper(s)	Related Description
Green Product	12	(Zhu & Sarkis, 2006), (Zhu et al., 2005), (Zhu et al., 2011a) (Bai et al., 2007) (Li & Cai, 2008) (Zhang et al., 2011) (Choi & Zhang, 2011) (Zhu et al., 2012) (Ip, 2003) (Thøgersen & Zhou, 2012a) (Zeng et al., 2012) (Qian & Soopramanien, 2015) (Yang & Zhang, 2012)	<ul style="list-style-type: none"> • Role of product's life cycle • Eco design of products • The importance of R&D • Green Food Certification • Organic Food Certification • Environmental standard of product production • Final product standards • Green materials • The importance of R&D • Application of green technologies • Green appliances • Green elements in product management • Green elements in production process • Application of green technologies • Eco design of products • Product transportation • End of life products management • Eco-labeling of products • The marketability of eco-products • The use of eco-friendly insecticide • The adoption of green products • The consumer motives of green products • Green and eco-labeled products • Increasing demand for green cars • Green purchasing/procurement price impacts
Green Price	1	(Lai & Wong, 2011)	<ul style="list-style-type: none"> • Green logistics management on prevention of environmental harm from product distribution activities
Green Place	3	(Choi & Zhang, 2011) (Miao et al., 2011)	<ul style="list-style-type: none"> • The relationship between green logistics management and the business performance of logistics enterprises • Five dimensions of companies' logistics social responsibility
Green Promotion	22	(Chan, 2004) (Wang et al., 2012) (Chan, 2013)	<ul style="list-style-type: none"> • The relationship between green advertising and green purchase intention of Chinese consumers • The importance of building an eco-friendly corporate image in green advertising • Environmental value-attitude-system model • Policy effects on cultivating consumers' social responsibility consciousness resource conservation and environment protection • The use of eco-labels

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|-------------------------|---|
| (Chan et al., 2006) | <ul style="list-style-type: none"> • Hotel green marketing • Effectiveness of environmental advertising • The eco-friendly brand/corporate image • Effectiveness of environmental claims in advertising |
| (Yin & Ma, 2009) | <ul style="list-style-type: none"> • Promoting involvement of recycling, eco-literacy, encouraging consumption reduction, and product substitutions |
| (Zhu et al., 2012) | <ul style="list-style-type: none"> • The use of ISO 14001 certification and eco-labeling practices • Eco-labeling effects on greener consumption patterns |
| (Zhao & Xia, 1999) | <ul style="list-style-type: none"> • Consumers' awareness of green labeled products • Key factors in environmental labeling program • Categories of environmental labels |
| (Liu et al., 2010) | <ul style="list-style-type: none"> • Mass media improving proactive environmental management |
| (Chan, 2004) | <ul style="list-style-type: none"> • The effect of environmental advertising claims on consumers • Effectiveness of all types of green advertising |
| (Liu et al., 2009) | <ul style="list-style-type: none"> • Green Watch program and environmental performance • Environmental social responsibility information disclosure |
| (Kuei et al., 2012) | <ul style="list-style-type: none"> • Self-regulatory and voluntary environmental standards promotion |
| (Bu et al., 2011) | <ul style="list-style-type: none"> • International market and corporate environmental image |
| (Zhu et al., 2012) | <ul style="list-style-type: none"> • Marketing pressures and environmental practices |
| (Zhu et al., 2011b) | <ul style="list-style-type: none"> • Globalization and regulation influences on corporate green promotion |
| (Lee, 2008) | <ul style="list-style-type: none"> • Effective environmental communications/advertising |
| (Barkmann et al., 2010) | <ul style="list-style-type: none"> • Sustainable tourism services promotion |
| (Wang & Juslin, 2009) | <ul style="list-style-type: none"> • Culture, corporate social responsibility and promotion |
| (Zhang et al., 2007) | <ul style="list-style-type: none"> • Promotional responses to green market pressures |
| (Lee, 2010) | <ul style="list-style-type: none"> • Green promotion and its influence |
| (Shen & Saijo, 2009) | <ul style="list-style-type: none"> • Energy efficiency label and promotion |
| (Xue, 2014) | <ul style="list-style-type: none"> • Effects of green visuals in advertising |
| (Xue, 2015) | <ul style="list-style-type: none"> • Message framing and collectivistic appeal in green advertising |
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Table 4: Summary of China's Industrial sector overview from green marketing publications

Sector	Industry Groups	Green practices in China	Descriptions
Energy	Energy	(Liu et al., 2010), (Liu et al., 2009)	<ul style="list-style-type: none"> Proactive corporate environmental management in power generation Application of green watch program in power generating industry
Materials	Materials	(Liu et al., 2010), (Zhang et al., 2007), (Yin & Ma, 2009), (Zhu et al., 2012), (Liu et al., 2009)	<ul style="list-style-type: none"> Standard emissions in pulp/paperboard and steel sectors Proactive corporate environmental management in chemicals, metals and non-metals ISO 14001 certifications in smelting and pressing of metals and metal products, non-metal mineral products, chemical materials, chemical and fiber products Application of green watch program in chemicals and metals industry; paper making industry
Industrials	Capital Goods	(Liu et al., 2010), (Yin & Ma, 2009), (Choi & Zhang, 2011), (Zhu et al., 2012)	<ul style="list-style-type: none"> Proactive corporate environmental management in machinery and equipment ISO 14001 certifications in general machinery and equipment, rubber and plastic products Green strategy plan in green property development practices Adoption of ISO 14001, TQEM, eco-auditing in petroleum and allied products industry Application of green watch program in machinery and equipment industry
	Commercial & Professional Services	(Liu et al., 2009), (Chan et al., 2006)	<ul style="list-style-type: none"> Application of green watch program in electroplating industry Effectiveness of environmental claims for services advertising
	Transportation	(Kuei et al., 2012)	<ul style="list-style-type: none"> Green operational practices in logistics industry
Consumer Discretionary	Automobiles & Components	(Miao et al., 2011), (Zhu et al., 2012), (Qian & Soopramanien,	<ul style="list-style-type: none"> Application of ISO14001, SA8000 certification, TQEM, eco-auditing

	Consumer Durables & Apparel	2015) (Wang & Juslin, 2009), (Liu et al., 2010), (Zhao & Xia, 1999), (Liu et al., 2009), (Li & Cai, 2008)	<ul style="list-style-type: none"> • Choice Models • Establishment of Corporate Social Responsibility (CSR) for the textile industry • Proactive corporate environmental management in textile, dyeing, and clothing industry • Environmental labeling programs in silk industry • Application of green watch program in textile and clothing industry • Green marketing and sustainable development of Garment industry
	Consumer Services	(Chan, 2013), (Barkmann et al., 2010)	<ul style="list-style-type: none"> • Green product and service design in Hong Kong hotel • Sustainable tourism services
Consumer Staples	Media Retailing	N/A	N/A
	Food & Staples Retailing	N/A	N/A
	Food, Beverage & Tobacco	(Thøgersen & Zhou, 2012b), (Liu et al., 2010), (Zhou et al., 2013), (Perrea et al., 2013)	<ul style="list-style-type: none"> • Adoption of organic food • Proactive corporate environmental management in paper industry • Consumers' attention to buy organic food • Adoption and purchase of organic food • Purchase of green- and eco-labeled seafood
	Household & Personal Products	(Thøgersen & Zhou, 2012b), (Zhou et al., 2013), (Perrea et al., 2013), (Zhu et al., 2013), (Xu et al., 2012), (L. Bai et al., 2007) (Zhang et al., 2007), (Zhao & Xia, 1999), (Zhu et al., 2012), (Liu et al., 2009), (Lee, 2010), (Xiao & Kim, 2009), (Ip, 2003), (Lee, 2009), (Chan & Lau, 2000), (Chan, 2008), (Chan, 2001)	<ul style="list-style-type: none"> • Environmental performance factors at individual polluting facilities • Environmental labeling programs in light industry sector • Green consumers' awareness in laundry detergent industry and the household refrigeration sector • Adoption of ISO 14001, TQEM, eco-auditing, green watch program in electronics industry • Marketability of eco-products
Health Care	Health Care Equipment & Services	N/A	N/A

	Pharmaceuticals, Biotechnology & Life Sciences	(Zhu et al., 2012)	<ul style="list-style-type: none"> Adoption of ISO 14001, TQEM, eco-auditing in pharmaceutical industry
Financials	Banks	N/A	N/A
	Diversified Financials	N/A	N/A
	Insurance	(Zhang et al., 2011),	<ul style="list-style-type: none"> Promotion of green strategy in housing development
	Real Estate		
Information Technology	Software & Services	N/A	N/A
	Technology Hardware & Equipment	N/A	N/A
	Semiconductors & Semiconductor Equipment	N/A	N/A
Telecommuni- cation Services	Telecommunication Services	(Yin & Ma, 2009)	<ul style="list-style-type: none"> ISO 14001 certifications in telecommunication equipment and machinery sector
Utilities	Utilities	N/A	N/A

Table 5: Summary of identified green consumer comparisons between China and other countries and regions

Country	Paper	Description	Stage
U.S	(Chan, 2008), (Chan & Lau, 2002)	<ul style="list-style-type: none"> Chinese consumers' degree of environmental affect is stronger or comparable to that of American consumers Perceived behavioral control will exhibit a stronger influence on Chinese consumers' green behaviors than on American consumers American consumers' green purchasing behavior is more likely influenced by their attitudes and subjective norms The conversion of intention to actual green purchases is more effective among American than Chinese consumers 	Stage 2-3
Canada	(Deng et al., 2006), (Zhu & Sarkis, 2006)	<ul style="list-style-type: none"> Chinese in Canada are more supportive of social-altruistic values than are Anglo-Canadians Chinese in Canada and Anglo-Canadians are not significantly different in biospheric values Chinese may have weaker knowledge in corporate culture, resource allocation, and environmental management performance; compared to Canada 	Stage 2-3
Europe	(Thøgersen & Zhou, 2012a)	<ul style="list-style-type: none"> Consumers in Europe are the first adopter of organic products 	Stage 3
Brazil	(Thøgersen et al., 2015)	<ul style="list-style-type: none"> Consumers' knowledge and adoption level is similar In both China and Brazil, and correlations between values and the attitude towards buying organic food are weak 	Stage 1-2
Hong Kong	(Lee, 2010)	<ul style="list-style-type: none"> Hong Kong nurtures most of the green consumers for international green marketers compared with mainland China Hong Kong has a longer history of acceptance of green products 	Stage 1-2

Table 6: Chinese consumerism demographics segmentation analysis from identified publications in this study

Demographics	Paper	Description
Gender	(Xu et al., 2012), (Shields & Zeng, 2012)	<ul style="list-style-type: none"> • Males are more environmentally concerned than females • Males show greater involvement in green movement
	(Chan & Lau, 2000), (Lee, 2009), (Thøgersen & Zhou, 2012a), (Thøgersen et al., 2015)	<ul style="list-style-type: none"> • Females show higher degree of ecological concern than males • Females score significantly higher in environmental attitudes than males
	(Deng et al., 2006)	<ul style="list-style-type: none"> • Females were more likely than males to endorse social-altruistic values • Chinese in Canada females and males are not significantly different in green consumerism
Marital Status	(Chan, 2000), (Chan & Lau, 2000)	<ul style="list-style-type: none"> • Married consumers more actively participate in the green movement
Age	(Chan, 2000)	<ul style="list-style-type: none"> • Consumers between 18-29 years old are the most promising green consumers
	(Chan & Lau, 2000)	<ul style="list-style-type: none"> • Consumers between 25-29 have a strong preference on green products
	(Thøgersen & Zhou, 2012a)	<ul style="list-style-type: none"> • Consumers between 26-34 are more willing to buy organic food
Education level	(Chan, 2000), (Chan & Lau, 2000), (Thøgersen & Zhou, 2012a), (Xu et al., 2012), (Thøgersen et al., 2015)	<ul style="list-style-type: none"> • University education or above more supportive of green movement • Positive relationship between environmental consciousness and education level • Consumers with a higher education level are more likely to pay price premium for eco-labeled seafood
Current employment category	(Chan & Lau, 2000)	<ul style="list-style-type: none"> • Managers/executives hold strong pro-environmental attitudes
Income	(Thøgersen & Zhou, 2012a), (Thøgersen et al., 2015)	<ul style="list-style-type: none"> • Consumers with higher income are more knowledgeable about organic food