“My house is green! Marketing a house as green”

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Abstract

The green trend, which addresses environmental issues through changes in services, product design, and innovation, is receiving increasing attention from consumers, organizations, industries, and governments around the world. This paper investigates the green trend in the property sector. Green building, also known as sustainable building, includes the planning, building and maintenance of a structure. The authors examine whether marketing a building as using green building elements is advantageous. Are consumers willing to pay more to live in a "green building"? How long does it take the organization to sell units in a "green building" compared to units using conventional building techniques? The authors collected data of apartment buildings and found that consumers are not willing to pay a higher price for green housing units, but that green housing units sell at a much faster pace. It took half the time to sell a housing unit with green building elements. In today's volatile time with mortgage concerns, and the apparent instability in the housing industry, this result is of significant importance.

Keywords: green marketing, housing, pricing, selling time, sustainability.

Introduction

Protecting the environment is becoming an increasingly large part of daily life. Many individuals are changing their life style in this regard, whether through recycling waste, consuming environmentally friendly products, or seeking information on protecting the environment. As consumer habits are changing, more organizations are seeking innovative ways to recycle or use environmentally friendly materials. Environmental protection, the practice of protecting the natural environment, is being increasingly supported by governments worldwide. Governments are gradually placing more restraints on activities that cause environmental degradation and supporting environmental management, conservation, and education. These factors are influencing national-level environmental decisions and personal-level environmental values and behaviors.

One of the most environmental damaging sectors is the property sector, which accounts for around thirty percent of greenhouse gas emissions (Royal Institute of Chartered Surveyors, 2005). The amount of energy used in the lifetime of a building depends largely on construction methods and materials. Buildings use approximately forty percent of the consumption of raw materials and energy in the world (Quigley et al., 2010). Further, fifty-five percent of wood that is not used for fuel is utilized for building. Energy costs are approximately thirty percent of an office's operational expenses and are usually the highest operational expense. Clearly, the costs of using these amounts of energy are passed on to the end consumers living or working in such buildings. From an environmentalist standpoint, there is significant room for innovation in the building sector. Clearly, buildings constructed with elements of "green" building will cause less damage to the environment, and in the long-run be less costly to the consumers.

Nevertheless, the main barrier that causes building organizations (developers) to maintain conventional building techniques is the cost. Building with environmental conservation techniques is more expensive and requires a larger up-front investment. In many instances, especially new buildings for offices or housing, the developer initially plans and builds the structure and only afterwards markets and sells the space.

In this paper, we examine whether marketing a building as using green building elements will be advantageous. We investigate whether consumers are willing to pay more to live in a "green building" and how long it takes to sell units that are marketed as using "green building" as compared to conventional building techniques. The plan of the paper is as follows. In the next section, we detail what is "green building" and describe the research conducted in this area. In the following section, we outline our propositions, describe the database collected, and provide the results from our analysis. In the final section, we conclude with a discussion and summary.

1. Green building

In the U.S. in 1998, the "Leadership in Energy and Environmental Design" (LEED) certification was introduced in order to encourage green building. LEED is a rating system for the design, construction and operation of high performance green buildings, homes, and neighborhoods. Four levels of green buildings are categorized by LEED: certified (40-49 points), silver (50-59 points), gold (60-79 points), and platinum (80 points and above). A building can earn points by implementing the elements of the green building method. Further, the LEED standard helps customers to identify a green building easily.

To date, LEED projects have been successfully established in 135 countries worldwide, including, China, Germany, Great Britain, Saudi Arabia, South Korea, Sri Lanka, Brazil, Mexico, India, and many more. Some other countries have adopted similar systems. For instance, Israel has used the "5281 Green Building Standard" since 2005 and in Canada the "Green Globes" standard is applied.

Green building, also known as sustainable building, includes the planning, building, and maintenance of a structure. It refers to a structure and process that is environmentally responsible and resource-efficient throughout the building's lifecycle. Green building methods have less impact on the environment and waste fewer natural resources. Green buildings use energy, water, and other resources efficiently throughout their lifecycle, thus protecting the occupant's health, safety, and productivity[1], while reducing waste and air pollution. Miller et al. (2008) found that the average costs of buildings meeting LEED certification are reported to be about 3-5.5% higher than the costs of regular construction, depending on the technologies used in the building. Investments in energy efficiency at the time of construction (or renovation) may save current resources expended on energy, water, and waste disposal, decrease other operating costs, insure against future energy price increases, and simultaneously decrease greenhouse gas emissions. The investment in building with green methods is estimated to be returned within five to six years (Miller et al., 2008).

Quigley et al. (2010) in their analysis of certified buildings found that in green office buildings rental rates are 3-6% higher per square foot than in otherwise identical buildings, controlling for the quality and the specific location of the buildings. The authors also find that the selling prices of green office buildings are higher by approximately 16%.

Miller et al. (2008) found that the barriers to "go green" in building are mostly a lack of planning and developer education, lack of knowledge about local vendors and resources, or uncooperative local officials. Yet, they found that most of those who have successfully navigated their way through the process of "going green" no longer see it as difficult, and therefore, many public companies are starting to initiate and to support resource and energy conservation policies.

Corbett and Suresh (2007) examined the adoption of green building elements by organizations. As LEED is a voluntary standard, they were interested in examining whether its adoption is related to signaling or intrinsic benefits. They found that both signaling and intrinsic benefits take a role in the adoption. Signaling means that the organization wishes to communicate something about its practices to the outside world, including regulators, customers, the public, etc., and intrinsic benefits means that the organization expects actual economic and/or environmental benefits as a direct result of the standard.

Yudelson (2009) claimed that from the diffusion of innovation perspective the green building movement is in the "early majority" phase of the total available market, claiming that "much of what is now still considered innovative becoming commonplace" (Yudelson, 2009, p. 7). This is a dramatic change in an industry that is traditionally considered slow moving and fairly conservative. As nowadays more developers are debating the best construction method, that is, utilizing green elements or using conventional building methods, in this study we investigated whether it is advantageous for the developer to market the building units as green. The questions on which we focus are: Will the developer be able to receive a higher price for the units marketed as green? And/or will s/he be able to sell these units faster? We focus on these two aspects as both directly affect the developer's profit. The faster the developer sells units, the faster s/he receives consumers' payments and recaptures the building costs (can return mortgages, continue to other building projects, etc.) This may be equivalent to receiving a higher price for the units at a later time in the selling process. Because of the high costs associated with building, it is important for the developer to be able to recapture his building costs as quickly as possible.

2. Propositions and empirical investigation

2.1. Propositions. *2.1.1. Proposition A: Higher willingness-to-pay for green housing.* Consumers will be willing to pay more for a housing unit built with green elements that is marketed as a "green" house. The underlying mechanism is that environmental housing is more environmental friendly, increases the quality of living, and saves costs in the long run.

2.1.2. Proposition B: Faster selling time for green housing. Marketing a house as green will shorten the time it takes a developer to sell an apartment. A unit marketed as green will shorten the consumer's decision-making time process. The underlying mechanism is that using green elements may serve as a signal to consumers about the quality of the unit.

[1] Quigley et al. (2010) claimed that improved indoor environmental quality in green buildings may result in higher employee productivity.

2.2. The data. In order to investigate the propositions, we collected data from four contractors who sold 221 residential units in central Israel. We focused on eight new building projects in the same central area, of which four utilized conventional buildings techniques and four used green building techniques (see Table 1 for detailed information on each building). The buildings chosen were similar in other aspects, for instance, number of floors, number of parking spaces, and more. More specifically, we chose new projects in a small radius. Therefore, similarly to Quigley et al. (2010), we tried to control for the quality and location of the buildings. As the units varied in size (even in the same building), we investigated the price per square meter. The number of green points was allocated based on the "5281 Green Building Standard" practiced in Israel. A building having over 55 points receives the green standard (the maximum is 100 points). The number of points allocated is based on the number of green elements applied in the building. The four "green" buildings we chose were of similar green standard, between 60 and 70 points. Similarly, the conventional buildings we chose were of similar standard. In total, there were 114 units with green elements and 107 without.

Table 1. Information on buildings

Building number	Number of apartment units	Green points[1]	Unit size range (sq. m)	Price range in thousands of Israeli Shekels	Number of floors in building
1	14	0	100-135	1590-1190	7
2	26	70	173-108	3775-1487	9
3	26	0	180-120	2750-1680	7
4	34	70	190-110	3050-1750	9
5	31	0	240-90	4245-1630	10
6	28	65	180-125	3095-1760	8
7	36	0	185-90	2310-1210	11
8	26	60	180-120	2950-1820	7

Note: [1] Zero green points indicates the usage of conventional building techniques (and no green standard applied).

3. Results

To test the first proposition, we compared the prices per square meter of housing units with green elements to those without green elements. The average price (in Israeli Shekels) per square meter of a green housing unit (M = 15.28, SD = 2.08) was not found to be significantly different from the average price per square meter of a housing unit with conventional building techniques (M = 15.08, SD = 1.28), $t(190) = -0.828$, $p = 0.408$. Therefore, we did not find support for proposition A.

To test the second proposition, we compared the selling time of units marketed as green versus units using standard building techniques. The number of average days taken to sell a green housing unit (M = 73.81) was significantly smaller than that to sell a "non-green" housing unit (M = 149.78), $t(176) = 7.847$, $p = 0$. The results support proposition B.

4. Discussion

Our results show that consumers are not willing to pay a higher price for green housing units. We tried to eliminate aspects that affect the price of housing units, for instance, location and quality, by choosing buildings in similar locations built by developers of similar standards. In addition, to control for the effect of unit size, we used the price per square meter as opposed to the price of the apartment unit. Nevertheless, there may be other factors that influence the price of a housing unit, for instance, the floor on which the unit is located, porch size, and number of parking spaces, and therefore, our proposition was not supported. It is possible that the price per square meter was not a sufficient construct as it varies with unit size. Smaller units usually have a higher price per square meter. Further, the research was conducted in 2011, a period of instability in housing prices. Perhaps in the future, when building green becomes more standard in the market, the price will have a significant role in distinguishing between green and non-green housing units.

The second proposition was supported, proving that the average time to sell a green housing unit is significantly shorter. On average, it took 74 days to sell a green unit, whereas it took double that time (150 days) to sell a "non-green" unit. In today's volatile time with its mortgage concerns and the apparent instability in the housing industry, this result is of significant importance for the developer, since it is important for the developer to be able to recapture building costs as quickly as possible. This result also indicates that marketing a housing unit as green may serve as a signal to consumers, which may reduce the amount of time they spend on the decision-making process.

We did not investigate the effect of the degree to which a building is green, as the green buildings we chose are of similar green standard (between 60-70 points). An interesting extension of our work would be to find the price per green point. To achieve this, a dataset consisting of buildings with a diverse number of points is needed. Another interesting extension

would be to find a better price construct than the price per square meter that may capture the difference between a green unit and non-green unit. We tried to minimize the effect of the location of the units on their price by choosing buildings in the same central area. However, even the value of units in similar buildings on the same street may differ. We leave these data limitations for future research opportunities.

Discussion and conclusion

In recent years, it has become evident that increasing attention is being paid to the depletion of natural resources, the development of "green" products and services, and the sustainability practices of organizations. Some research on the green consumer has been conducted in marketing. Shrum et al. (1995) constructed a psychographic profile of the green consumer and found that he or she is a careful shopper who seeks information on products, including information from advertising. The authors recommend that marketers should take care not to alienate green consumers by using ambiguous or misleading messages. Straughan and Roberts (1999) also examined the nature of ecologically conscious consumer behavior using college students as their subjects. They found that perceived consumer effectiveness and altruism provide the greatest insight into ecologically conscious consumer behavior. Chen (2001) jointly considered the interactions among the customers' preferences, the producer's product strategies, and the environmental standards imposed by governments. He found that green product development and stricter environmental standards may not necessarily benefit the environment.

Bullard and Manchanda (2012) examined the sustainability practices of organizations. They examined the difference between a *promotion* focus for marketing products and services, which emphasizes attainment, achievement and advancement, and a *prevention* focus, which emphasizes protection, security, and responsibility. The authors found that (1) the perceived sustainability practices of a company activate a prevention focus in consumers; (2) consumers make prevention-focused inferences about the products of a sustainable company; and (3) sustainable products are perceived to be better positioned if they are marketed with prevention-framed (vs. promotion-framed) appeals. This suggests that the marketing efforts of companies with sustainability-oriented practices and product offerings will be more effective if they use prevention-focused appeals.

Little marketing research has been conducted on the effects of marketing a green building. As one of the most environmental damaging sectors is the property sector and also one of the most expensive costs consumers face in their lifetime concerns property, the issue of whether to "go green" with the housing choice is becoming increasingly important. In this study, we investigated whether consumers are willing to pay a higher price for or to purchase a green unit more quickly. Whereas we found no support for a higher price for green housing, we did find that green units sell much more quickly. Specifically, they sell in half the time of a standard house. This result is especially important for developers and consumers in times of economic uncertainty. For developers, this result can assist in marketing their houses as well as their ability to return their upfront costs and mortgages. The recent use of environmental issues as a source of competitive advantage in business has become increasingly apparent in many areas, and this paper shows that is also occurring in the property sector. From the consumer's side, "going green" in housing may serve as a signal that assists them in the decision-making process. Applying our results to Bullard and Manchanda's (2012) findings indicate that if a building organization uses sustainable practices so that they can market their buildings as having a green certification (i.e., LEED), this may activate a prevention focus in consumers. The prevention focus that is activated emphasizes responsibility and security, and therefore it assists consumers in their decision-making process concerning housing, which is a high involvement product.

Several cities, such as Boston and San Francisco, have already mandated LEED certification. As an increasing number of places are going green, it is important to investigate this research area further. For instance, future research can investigate behavioral aspects concerning the consumer decision process of green housing. Other research topics are the diffusion of green housing and the effects of the marketing mix on "going green" in housing. If "going green" will not be advantageous to the developers, the trend will not be able to evolve.

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