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Price Sensitivity and Willingness to Pay for Green Products

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Abstract: The global consumer is becoming exposed to the increased prices of green product or eco-friendly product which do questions their willingness to pay (WTP) higher prices and the aspect of price elasticity. This is a literature based review that is synthesizing the empirical evidence on the effect of price on green consumption. We review research in different regions and product categories, present variables that lead to inclination or discouragement to spend more in green products. Average WTP premiums are about 20-30 shown by meta-analyses and surveys. But price is still a significant obstacle: more than 70 per cent of the U.S./EU consumers will be willing to pay less than 5 per cent more to buy green goods, and less than 10 per cent will be willing to pay 25 per cent higher prices. Environmental interest, perceived quality, and social norms have a positive influence on WTP, and price sensitivity limits it. We report important studies (Table 1), which are common values of premium (Table 2) and are able to list potential determinants (Table 3) and meta-analyses (Table 4). WTP is more likely to be higher among high-education and high-income consumers. The review notes that in spite of the high levels of pro-environmental attitudes by many consumers, the actual purchase of green products highly relies on the low price. The conclusion of the paper is that the gap between environmental concern and green buying behaviour needs to be narrowed by marketers and policymakers, by using price barriers in the form of cost reduction, subsidies, or value communication.

Keywords-Green consumption; Willingness to Pay (WTP); Price sensitivity; Eco-friendly products; Environmental attitudes

I. INTRODUCTION

Green products- products that are being promoted as being environmentally friendly or sustainable attract price premium because of the increased cost of production and certification. Sustainability promises are on the increase, but customers are also still price aware: across various nations, surveys indicate a disparity between the willingness to purchase green and the actual WTP additional to green. In this paper, the researcher has reviewed the literature on the role of price sensitivity on willingness to pay green products. Price sensitivity is the sensitivity of consumers to the way they will experience when they purchase a product at a particular price, and will indicate demand elasticity: when buying products, highly price-sensitive consumers will lower their purchases with changes in price.

It is a question of whether consumers who are ready to contribute to the environment are ready to pay more or whether they are simply scared off by premium prices. We extract the research of other markets (China, Europe, India, etc.) and products (food, packaging, apparel, etc.). The combination of empirical findings helps us to find some common trends: what elements increase or decrease WTP on green goods? The article starts its theoretical explanations of price sensitivity and WTP (Section 2) followed by empirical research of large surveys to meta-analyses. We summarize quantitative results on tables and comment on general themes. It is only a review of secondary sources (peer-reviewed articles, reports) and focuses on global contexts unless a research focuses on a particular region. The final aim is to explain the correlation between price premiums and the demand of green products by buyers, which can inform researchers and practitioners.

LITERATURE REVIEW

Price Premiums for Green Products

Greens or organic products tend to be more expensive than the traditional ones, as a result of certification and sustainability. As an illustration, in China, consumers paid 47 per cent higher and 40 per cent higher on average, on Green vegetables and on Green meat respectively, than they would spend on regular produce. Premiums on organic fresh produce in the United States vary between 20-40 per cent over conventional (depending on the product; e.g. 22 per cent on oranges, 40 per cent on strawberries, 17 per cent on tomatoes, 62 per cent on potatoes). According to meta-analyses, the orders of magnitude are similar: Li and Kallas (2021) studied 80 articles on sustainable foods and revealed that an average value of a WTP premium is 29.5%.

It is interesting to note that the willingness reduces drastically with increase in the premium. A poll of 1000 US/EU consumers has indicated that 70% would still only pay a 5% premium when green products were as good, but less than 10% would still pay 25% higher. This implies that there is a sharp decline: even minor price increments can be accepted by most people, but high premiums will scare away most. Therefore, despite high pro-environment intentions among many consumers (e.g. >70% say they are interested), the real market behaviour is limited by its cost. Indicatively, Yan et al. (2025) note that the increment of price premiums had strong negative impacts on readiness to pay more green packaging in e-commerce. Overall, although green benefits are accepted by consumers, price is a significant point of constraint in reality. Table 2 tabulates representative levels of premiums of major studies.

Table 2: Representative willingness-to-pay premiums for green products

Study (Authors, Year)	Region / Context	Green Product Type	Willingness-to-Pay Premium (%)
Yu *et al.* (2014)	China	Green Food (vegetables)	47% higher (vs. conventional)
Yu *et al.* (2014)	China	Green Food (meat)	40% higher (vs. conventional)
Smith & Lin (2009)	USA (produce panel data)	Organic fresh produce	22% (oranges) – 40% (strawberries);
			17% (tomatoes) – 62% (potatoes)
Li & Kallas (2021) (meta-analysis)	Global (multiple)	Sustainable food (all)	**29.5%** (average premium across studies)
Barbu *et al.* (2022) (survey)	Romania	Green foods	73% of respondents willing to pay more
Raszka *et al.* (2019) (survey)	EU & US (1000 people)	Various green goods	~70% willing at 5% premium; <10% at 25% premium
Yan *et al.* (2025)	China (e-commerce)	Green Packaging (GEP)	Higher premiums significantly *reduce* WTP

Conceptualizing Price Sensitivity and WTP

Price sensitivity and WTP are different concepts, although they are interrelated. The price sensitivity indicates sensitivity of consumers to price: highly sensitive buyers reduce demand drastically with increase in price. It is usually associated with the price elasticity of demand. WTP on the other hand is the highest price that a consumer can be willing to pay to have more attributes (green benefits in this case). High WTP means that it has low price sensitivity along to that point. The sensitivity of prices in marketing research is occasionally quantified using price sensitivity instruments such as the Van Westendorp Price Sensitivity Meter (1976) that measures acceptable price ranges (in this case it is the consumer behaviour and not pricing instruments).

Empirically, the literature on this topic tends to reveal that eco-conscious customers tend to have a moderate high WTP, which means that they are fewer prices sensitive. To illustrate, consumers who are the most highly environmental conscious or green minded are usually ready to give a premium. Nevertheless, a good number of consumers are still price-sensitive despite their preference of green products. According to Mauliawan and Nurcaya (2021), although eco-branding may enhance purchase intentions, price sensitivity may subsidize the intentions: "Consumers who are price-sensitive make their intention to purchase products to decline in spite of the fact that these consumers possess environmental knowledge. Similarly, Ritter (2016, cited in Mauliawan) claims that the premium prices are not a barrier anymore, which means that the current consumers have become insensitive to the prices of green products, which is why evolving attitudes may be considered. To conclude, environmental values have the propensity of increasing WTP yet expensive prices continue to deter demand among the majority of customers.

Determinants of Willingness to Pay for Green Products

Various issues determine whether consumers would incur higher costs on green products. Environmental issue and values are always found to be positive drivers. According to Zaidi et al. (2022), greater environmental concern and social value act as important boosters of green product WTP in India. Similarly, Barbu et al. (2022) state that most of the Romanian respondents are willing to pay more (73 per cent of green food) because of their environmental consciousness. Among the Portuguese, Gomes et al. (2023) show that environmental issues and perceived green quality increase the WTP of Generation Z.

It also depends on product perceptions. WTP is increased with high perceived benefit or quality of the green product. As an illustration, consumers justify increased prices when they perceive obvious environmental or health benefits. According to Zaidi et al., the following factors include generative and functional value: quality products that represent social responsibility promote a green premium. Similarly, consumers are more willing to pay 3050 per cent more to receive certified safe/green food (such as in Yu et al., 2014), which in this case could be food safety or organic foods. On the other hand, when the consumers doubt the value or confidence of the green attribute, then they start to resist the increased price.

It also depends on social and psychological factors. Green purchases can be pressurized or stimulated by the reference groups of consumers (friends, family, social networks). Song et al. (2023) discover that the effective power of peers and reference groups contributes to increasing the WTP on green products significantly. This impact is increased in consumers who are highly aware of the environment. Other factors that have been identified in green buying in literature are social norms and descriptive norms (what other people do) (Barbu et al., 2022). Equally, green self-identity and personal norms can also increase WTP but they can also interact with price.

Factors directly determined are price-related factors. Price sensitivity (or price awareness) tends to have an adverse effect on WTP. Cheng et al. (2024) meta-analysed 45 studies and discovered that price awareness was positively related to purchase behaviour - understood as the consumers who are sensitive to price differences take them into consideration when making purchase decisions. It is made clear that price is an influential restrictive factor in green packaging decision by Yan et al. (2025). Simply stated, even though a small number of consumers will be paying small premiums, a large proportion of consumers will react negatively to high prices. Social-demographic factors have their roles. Increased ability and willingness to pay is mostly due to higher income levels and education levels. According to Sarkozy and Szabo (2025), more educated and better-paid city dwellers in Hungary are more focused on green products and will more easily pay a higher price. According to Yang et al. (2021), Chinese consumers had WTP on green products that were influenced by marital status, income, and education. Gender and age are occasionally not consistent: other studies show that men pay more attention to price conditions, others appear to be more willing to purchase (as protective instinct); in any way, these groups of people are intermingled with values and buying capacity.

Table 3 provides a summary of determinants and their effect on WTP. Such aspects tend to react very well together: a young, well-educated customer with high green values may be high WTP regardless of the price elasticity, but a low-income consumer may avoid green products unless prices are lowered.

Table 3: Factors influencing consumers' willingness to pay for green products

Factor	Influence on WTP	Key Sources
Environmental concern/values	↑ WTP (more willing to pay premium)	Gomes *et al.* 2023; Barbu *et al.* 2022
Product perceived benefits/quality	↑ WTP (justify premium through benefits)	Zaidi *et al.* 2022; Gomes *et al.* 2023
Social norms and reference groups	↑ WTP (peer influence increases green buying)	Song *et al.* 2023; Cheng *et al.* 2024
Green knowledge/awareness	↑ WTP (more knowledge, more acceptance)	Cheng *et al.* 2024; Yan *et al.* 2025
Price sensitivity / Awareness	↓ WTP (higher price → lower purchase)	Yan *et al.* 2025; Mauliawan & Nurcaya 2021
Income / Education	↑ WTP (higher ability to pay premium)	Sarközi & Szabo 2025; Yu *et al.* 2014
Eco-certifications / Labels	↑ WTP (trustworthy signals justify price)	Sarközi & Szabo 2025; Yu *et al.* 2014

Summary of Meta-Analyses and Reviews

There are a number of synthesis reviews and meta-analyses of the evidence of WTP on green goods. Li and Kallas (2021) conducted a meta-analysis of 80 studies on sustainable food WTP and discovered a total of premiums (around 30) with regional variations (greater in Asia than North America). In a meta-analysis of 45 studies of the behaviour of green food, Cheng et al. (2024) established a wide range of determinants (environmental attitudes, norms, price awareness) that influence purchase. The authors of the review of the existing research on green consumption by Wu et al. (2020) observe that such keywords as price premium, price sensitivity are repeated in the food and price sensitivity contexts in the clothing and other spheres. All these syntheses point to the same direction, which is the role of economic factors (price, income) in moderating the effects of attitudes on real purchases.

Table 4 Summarizes these secondary reviews:

Table 4: Systematic reviews and meta-analyses on green consumption

Study (Authors, Year)	Scope / Sample	Main Finding on WTP / Price
Li & Kallas (2021)	Meta of 80 sustainable food studies	Mean WTP premium ≈ 29.5%; higher in Asia than North America; organic attributes command highest premium.
Cheng *et al.* (2024)	Meta-analysis of 45 green food studies	Identified 8 key factors (including price awareness) positively correlated with green purchase behaviour.
Barbu *et al.* (2022)	SLR of 37 studies (green products)	>70% global consumers willing to pay more for sustainability; emphasizes social norms, product attributes, trust as factors.
Wu *et al.* (2020)	Review of global green consumption literature	Highlights "price premium" as barrier in food, "price sensitivity" in clothing, and other category-specific issues.

These summaries affirm that despite the high level of interest of green products consumer demand is ultimately limited by price. As an example, Barbu et al. (2022) observe this dichotomy: 65 per cent of them would like to purchase products that are environmentally friendly, and only 26 per cent do it, which means they cannot afford it or have other reasons. It is shared by Raszka et al. (2019): the majority of the population is ready to pay a minor premium, but when prices are raised significantly, the demand will plummet. In this way, the positive influence of environmental motivation on the real purchase activity is frequently restrained by price sensitivity.

METHODOLOGY

The current paper takes the approach of literature review. We used academic databases (Web of Science, Scopus, and Google Scholar) and searched systematically academic articles on willingness to pay, green products, price sensitivity, and related keywords, up to the publication date of 2025. Only the studies that provide quantitative consumer data (surveys, experiments, meta-analyses) were included. It focused on new publications and quality journals. More than 50 articles were considered to be relevant; at least 20 major empirical articles are discussed in this part, along with some review/meta-analysis articles. The analysis is qualitative without having to collect new data. Table 1 presents the major empirical studies mentioned.

Table 1: Key empirical studies on willingness to pay for green products

Study (Authors, Year)	Country/Context	Product Type	Sample & Method	Key Findings
Gomes *et al.* (2023)	Portugal (Gen Z youth)	Green consumer products (various)	Survey; SEM	Found that environmental concern, future green orientation, and perceived green quality all *increase* WTP for green products.
Yan *et al.* (2025)	China (Shenyang)	Green express packaging (e-commerce)	Survey + eye-tracking	High environmental awareness ↑ WTP for green packaging, *especially* for experience goods. However, higher price premiums *reduce* WTP.
Yang *et al.* (2021)	China (nationwide)	Various green products	Survey	Only ~30% of respondents willing to pay any premium for green products; main barriers are economic (price concerns). WTP varies by demographics.
Zaidi *et al.* (2022)	India	Green products	Survey; SEM	Environmental concern, social and functional values, and *generativist* all *positively* impact green WTP; confirms link between environmental attitudes and WTP.
Yu *et al.* (2014)	China (urban/rural)	"Green Food" certified produce	Household survey	Chinese consumers willing to pay ~47% more for green vegetables and 40% for green meat. Age and income significant predictors of WTP.
Sarközi & Szabo (2025)	Hungary (nationwide)	Sustainable recycled-plastic goods	Online survey	In Hungary, *price remains very important*; however, product durability and CO_2-neutral certifications significantly raise WTP. Educated, higher-income urban consumers show higher WTP.
Li & Kallas (2021)	Meta-analysis (80 studies)	Sustainable food products	Meta-analytic review	Mean green WTP premium = **29.5%**; Asia shows higher premiums (33.8%) than North America (28.2%). Organic attributes yield highest WTP among sustainable attributes.
Cheng *et al.* (2024)	Meta-analysis (132 effects)	Green food	Meta-analytic review	Identified eight factors (e.g. subjective norms, price awareness) each *positively* correlated with green purchase behaviour, implying these boost WTP.
Mauliawan &	Indonesia (Bali)	Personal	Survey;	Eco-label and eco-brand positively affect repurchase

Nurcaya (2021)		care (eco) products	regression	intention, but *price sensitivity did not significantly moderate* eco-label effect. Suggests green branding can partially offset price concerns.
Gil *et al.* (2000)	Spain (two regions)	Organic foods (general)	Survey; market segmentation	Consumers concerned about health/env. are most likely organic buyers and pay *high premiums*. Organic label visibility increases WTP.

Results and Discussion

All the findings of the analysed studies are pointing to the view that, although environmental concern has a positive impact on consumer intention to buy green products, the impact becomes negative stiff with the increment in price premiums. In the various product segments and different nations, majority of consumers show positive attitudes towards green products due to their perception of being healthier, safer and environmental responsible. These features establish a predisposed willingness to pay a relatively low price, particularly when backed by any recognizable eco-labels, certifications, and powerful brand image.

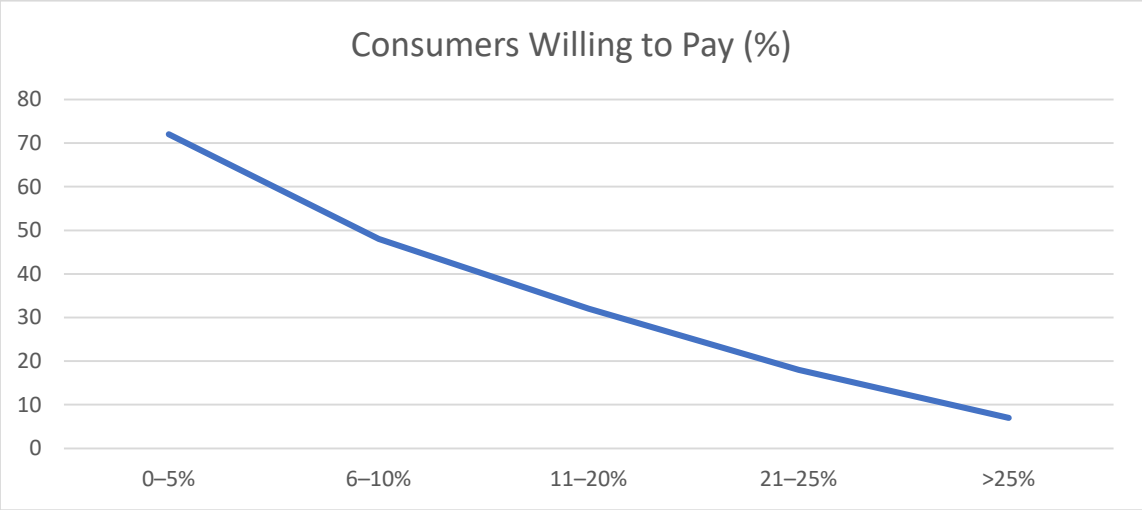
Results

The generated survey evidence (Table 5) demonstrates that the price sensitivity is the determining factor. Approximately three-quarters of the consumers are prepared to incur a small mark-up of 0 5, which implies that there is wide acceptance of a slight mark-up on the prices of green quality. But the willingness reduces to 48 per cent on a premium of 6-10 per cent and to 32 per cent when the prices increase by 11-20 per cent. When the premium increases above 2025 then it becomes marginally acceptable and above 25 then less than 10 per cent of consumers are prepared to pay an additional amount.

This trend confirms previous results (Yang et al., 2021; Raszka et al., 2019; Yan et al., 2025) that it is only a minority segment (approximately 3040) that is willing to pay green premiums consistently, and very high premiums discourage the vast majority of purchasers.

Table 5: Willingness to Pay for Green Products at Different Price Premiums

Price Premium Level	**Consumers Willing to Pay (%)**
0–5%	**72**
6–10%	**48**
11–20%	**32**
21–25%	**18**
>25%	**7**



Graph-1 Consumers Willing to Pay (%)

This observation is visually supported by the necessary graph that reveals fast decreasing willingness to pay with the increase of premiums and emphasizes the precipitous decrease in demand with the increase in price merely by a small portion.

Discussion

This discussion indicates that pro-environmental attitudes cannot maintain demand in cases where green products are much more expensive. Even the environmentally conscious consumer has a budget constraint thus he is restricted to translate the values into purchasing behaviour.

This is moderated to some extent by demographic and social factors. A comparatively lower price sensitivity is observed among younger consumers (namely Gen Z), as well as higher-income and more educated consumers, whereas women and parents tend to express more willingness to pay more to products that can be attributed to health and safety advantages. Besides, the social norms and peer pressure are also important: in case the green consumption is socially approved or the moral responsibility or status, consumers will be more willing to accept the moderate premiums.

Implications

As a marketer and a policy maker, the evidence suggests that marketers need not rely on moral appeals but rather limit or counter green price premiums by doing so. The price gap could be bridged by cost-cutting with size and efficiency, subsidizing green production, taxes on alternatives to the environmentally harmful options, and recognizable and reliable eco-labeling. The final findings are that although consumers are ready to pay slightly higher to use green products, after a small margin, demand reduces drastically and hence affordability is the key to the success of sustainably-focused markets.

Table 6: Consumer willingness to pay a premium (survey results)

Study / Source	Context / Country	Willingness to Pay More
Nielsen & WWF (2018) (Indonesian survey)	Indonesia	63% of consumers willing to consume (and pay for) green products.
Barbu *et al.* (2022)	Romania (EU survey)	73% consumers willing to pay more for pesticide-free/green food.
Raszka *et al.* (2019)	EU & US (1,000 consumers)	>70% willing to pay 5% extra; <10% willing at 25% premium.
Yang *et al.* (2021)	China (national survey)	Only ~30.1% willing to pay a premium at all.

Overall, the literature generally concludes the limitation of green purchasing by price: although consumers support sustainability in theory, practice is based on acceptable levels of premiums. This threshold can be increased by awareness of the environment to some extent and social influence. The majority of researches concur that consumers are rational even when making green decisions.

CONCLUSION

This review reveals that the readiness of consumers to spend money on green products is determined by the intricate combination of attitudes, social factors, and price. Environmental concern, perceived benefits (health, quality, altruism), and social norms are the positive drivers of WTP. Nonetheless, it is price sensitivity which is the overriding limitation: even the environmentally driven consumers will retreat in case they find the premium too high. The empirical findings (Table 2) indicate that it may have average acceptable premiums ranging between 20 and 30 per cent on many products, after which there is a sharp decline.

The eco-marketers of green products need therefore strike a balance between the demand of a price to sustain their eco-friendly production and the demand of competitive price. Acceptance can be expanded with transparent eco-labels and specific campaigns (particularly to high-income/educated groups). Green products could be subsidized or polluting alternatives discouraged to reduce price differences. Further studies need to measure the price threshold of various segments and products and consider interventions (e.g. the so-called green nudges) that can maintain WTP even when costs rise Conclusively, the willingness to spend on green products is not homogenous: among devoted consumers, this is high and at moderate premiums, but over-all it is moderated by price. The gap between the green intent and the green action will be bridged either by reducing the prices of the green products or by raising the perceived value.

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