

A Practical Framework for Green Policy Decision-Makers: Maximizing Sustainability by Incorporating Consumer Behavior and Environmental Expert Opinion

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Executive Summary

Which “green” activities are consumers performing in their everyday lives?

Activities that-

- Save them money?
- Are easy to do?
- Are the most beneficial to the environment?
- Some combination of the three?

By combining insights from a recent survey of consumer behavior with expert opinion on green activities I found that:

- Activities that experts rank as the most beneficial for the environment are not always performed frequently by consumers.
- Economic benefit to the consumer is a stronger predictor of frequently-performed activities than environmental benefit.
- However, convenience to the consumer is the best predictor of green behavior!
- Decision-makers for sustainability programs can tailor this method to their particular location by:
 - Compiling a list of green activities specific to their region.
 - Surveying local consumers and experts.
 - Altering which dimensions are included in assessing the importance of various green activities.
- “Newcomer” communities can maximize the impact of launching their green programs by:
 - Prioritizing activities that are convenient and economical for the consumer.
 - Motivating consumers with educational programs and incentives.
 - Waiting until the environmental program has gotten off the ground before encouraging activities that are low in convenience and economic benefit- unless they can be financially subsidized.
- “Veteran” communities can prioritize the activities using environmental benefit:
 - Activities that are most convenient can be financially penalized for non-compliance.
 - Less convenient activities can have incentives for performance.

Introduction

The Issue

In today's world, local and regional policymakers seek creative and effective ways to encourage the public to protect the environment by sustainable living. At the same time, consumers are overloaded with information on which green activities to incorporate into their daily lives. While many consumers have good intentions, it may be difficult for them to accomplish some of these goals, or simply to figure out which ones are the most important. Public policy often focuses on which activities benefit the environment, minimizing the importance of incentives that the activities provide for the individual consumer. Additionally, decision-makers encounter difficulties in prioritizing the actions that consumers can take to protect the environment, since many activities can have a measurable impact.

For decision-makers to craft environmental policy and effectively communicate with the public, they need answers to crucial questions. Which green activities are easy to perform or economically beneficial to the consumer? At the same time, how do policymakers ensure that they are employing appropriate encouragement, incentives, or enforcement to ensure that the most environmentally beneficial activities are being done?

Potential Solution

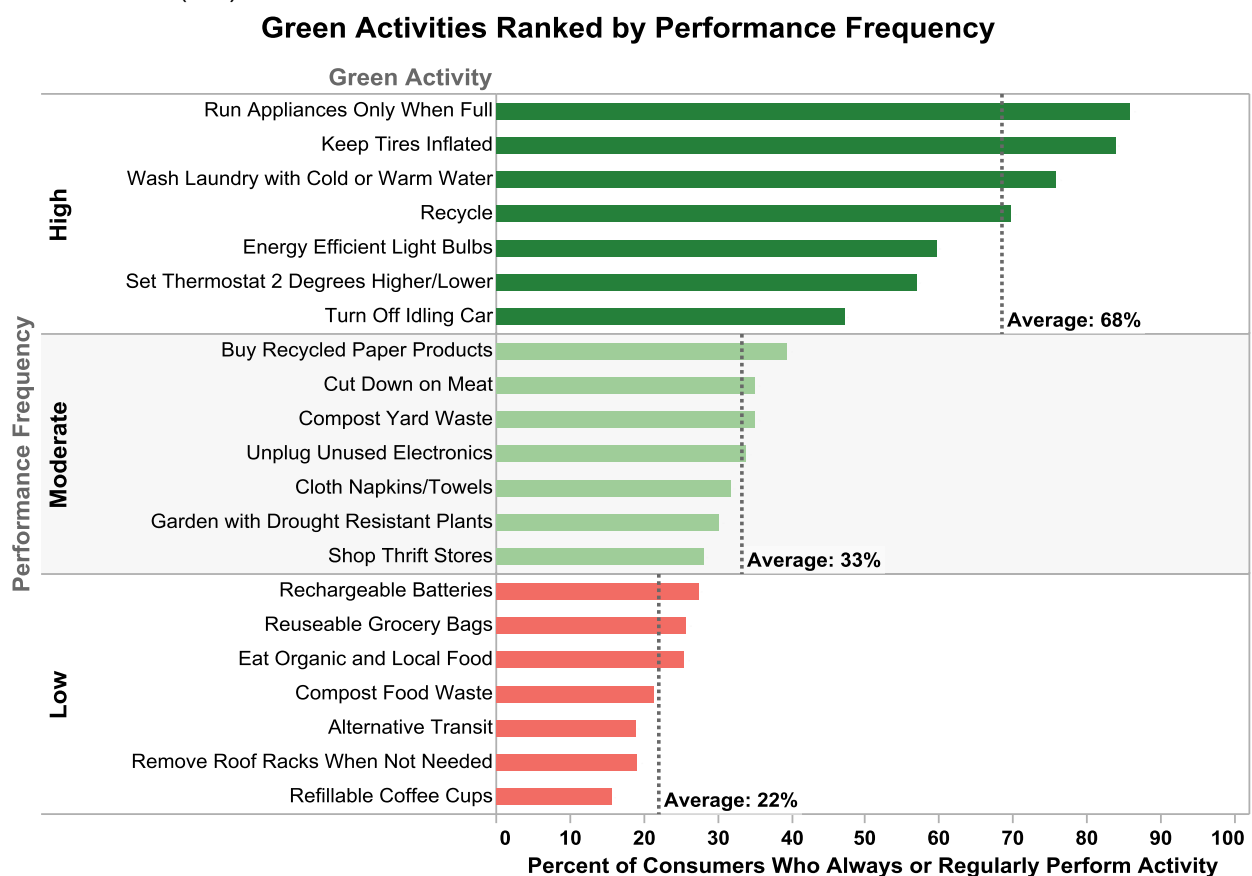
To simplify selecting which green activities decision-makers should promote, I approach the issue from a new perspective by developing a simple and comprehensible model that can assess which environmental programs are a better fit for your city or region and therefore more likely to succeed.

The model is based on data obtained from two separate surveys. First, I summarize what consumers are performing in their everyday lives to protect the environment, based on the results of a nationwide survey that asked people how often they are performing specific green activities. Second, to assign "value" to each activity, I developed a survey and sent it to a variety of environmental experts in the state of Washington, asking them to rate the activities in three different dimensions: benefit to the environment, economic benefit to the consumer, and convenience for the consumer.

Starting Point: What green activities are Americans performing?

To discover how “green” Americans are, I analyzed data from a nationwide phone survey conducted in November 2008 (performed in collaboration with and financially supported by Opinion Research Corporation – Northwest). The survey asked 1000 people to rate how frequently they performed twenty-one specific green behaviors, such as unplugging unused electronics and composting yard waste. The sample was representative of the nationwide population in demographics such as gender, age, income, and proximity to metropolitan area.

In the graph below, performance frequency is expressed as the percentage of respondents that always or regularly performed each of the twenty-one activities. The activities are ranked and divided into three groups of seven: High (dark green), Moderate (light green), and Low Performance (red).



Note that the activities in the High Performance Group were done (on average) by 68% of respondents- more than twice the level of activities in the Moderate Group (33%) and over three times that of the Low Group (22%). Additionally, the variability of activity performance within the High Group is much greater than the Medium and Low Groups – although the specific values are not shown in the graph, the performance levels range from 47% to 86%. However, the top four activities are performed by more than 70% of individuals. One of the goals of this paper is to explore why certain activities are performed more than others.

The Problem: How valuable are these activities?

Attempts to assign numerical “values” to these twenty-one activities by researching government, academic and non-profit publications for commonly used measures such as carbon emissions or economic costs and benefits proved very difficult. Various environmental organizations use different measurement scales. Additionally, costs and benefits of activities vary based on differences in lifestyle and demographics of the consumers. Therefore, direct comparisons were complex and required many assumptions.

A more direct and simple method for policymakers to compare the usefulness of these twenty-one activities is to assign them values using a basic three-dimensional scale: benefit to the environment, economic benefit to the consumer, and convenience for the consumer to perform the activity.

To develop this scale, I developed and sent an opinion survey to various environmental experts in the public and private sectors, non-profit organizations and educational institutions in the state of Washington. Thirty-six experts with an average of seventeen years of experience in the environmental field (ranging from two to forty years) completed the survey (to those who responded - thanks so much for your help!). All respondents also were involved in environmental issues in their free time, including hobbies such as volunteering, being a nature enthusiast, having a vegetable garden or reading about the environment.

The experts ranked each of the twenty-one activities separately on the three dimensions listed above. For each dimension, they divided the activities into one of three groupings - High, Moderate and Low - resulting in seven activities per group. This is similar to the grouping of consumer frequency rankings above.

Results were graphed with performance frequency superimposed to assess how often consumers are doing the highest ranked activities. These graphs are shown in the following sections.

Tying Expert Opinion into the Green Routine: Expert Rankings

To evaluate various green activities, this analysis incorporates:

Consumer-reported assessment
(performance frequency of green activities)

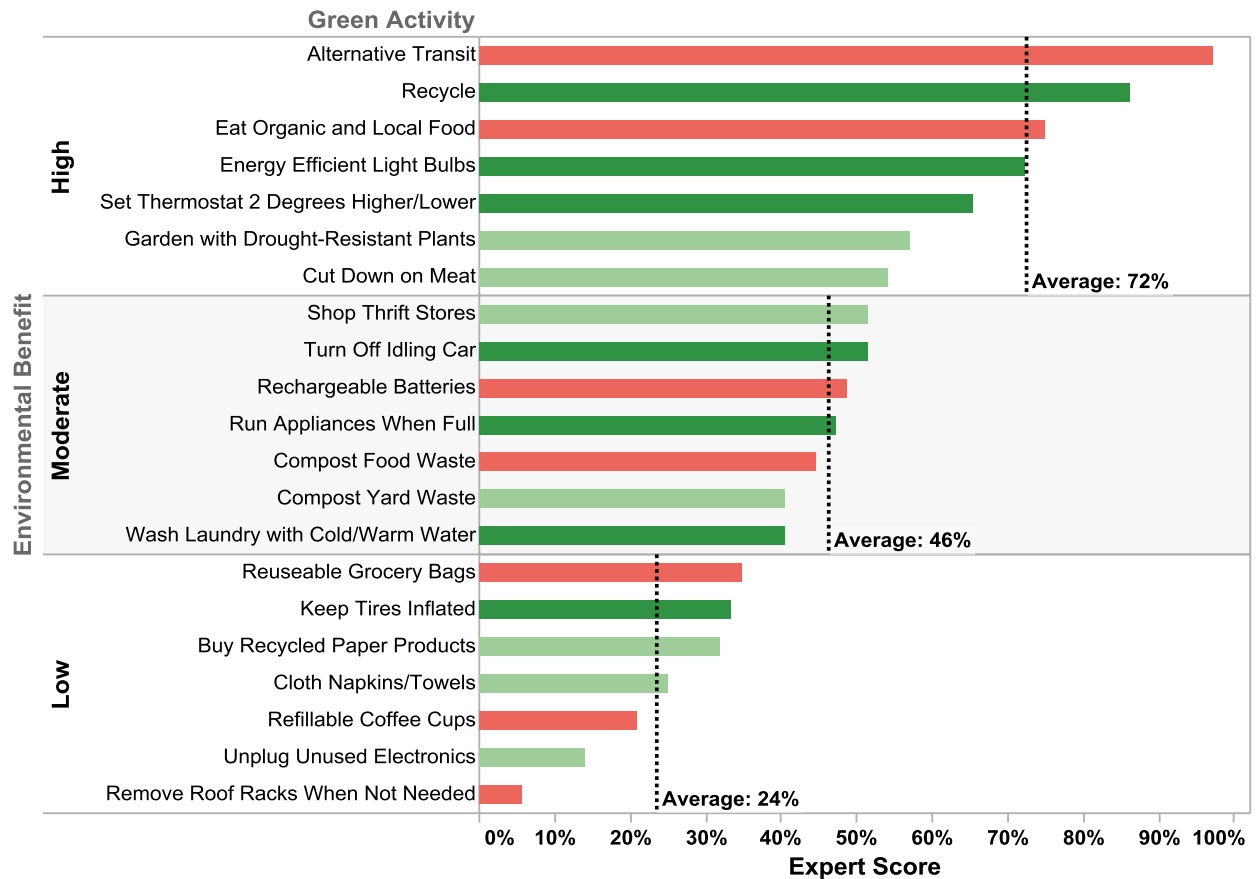
+

Expert opinion
(benefit to the environment + economic value to consumer
+ convenience for consumer to perform)

Environmental benefit

First, we look at performance frequency relative to the rankings of environmental benefit. Although it's encouraging that three of the activities with high environmental rank (*recycle*, *energy efficient light bulbs*, and *set thermostat 2 degrees higher or lower*) are in the High Performance category, four of them aren't. Unfortunately, two activities with the lowest performance (*alternative transit* and *eat organic and local food*) have the first and third highest environmental scores.

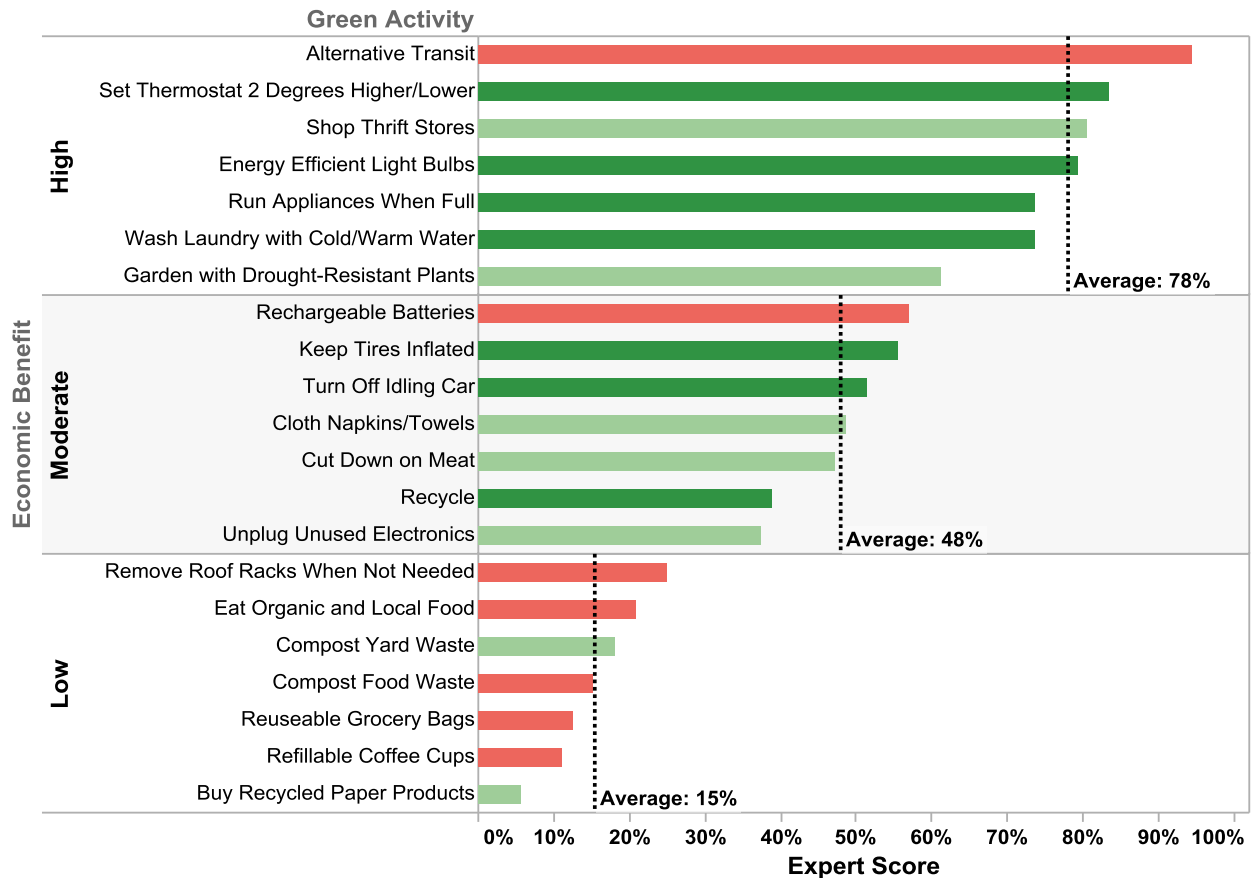
Expert Ranking of Environmental Benefit with Consumer Performance in Color



Economic Benefit to the Consumer

Four of the high economic benefit activities are also in the High Performance category, which demonstrates that in this case, economic benefit is a better predictor of consumer performance than benefit to the environment (which only had three). Only one is in the Low Performance group (*alternative transit*), but note that this has the highest environmental score.

Expert Ranking of Economic Benefit to Consumer and Performance in Color

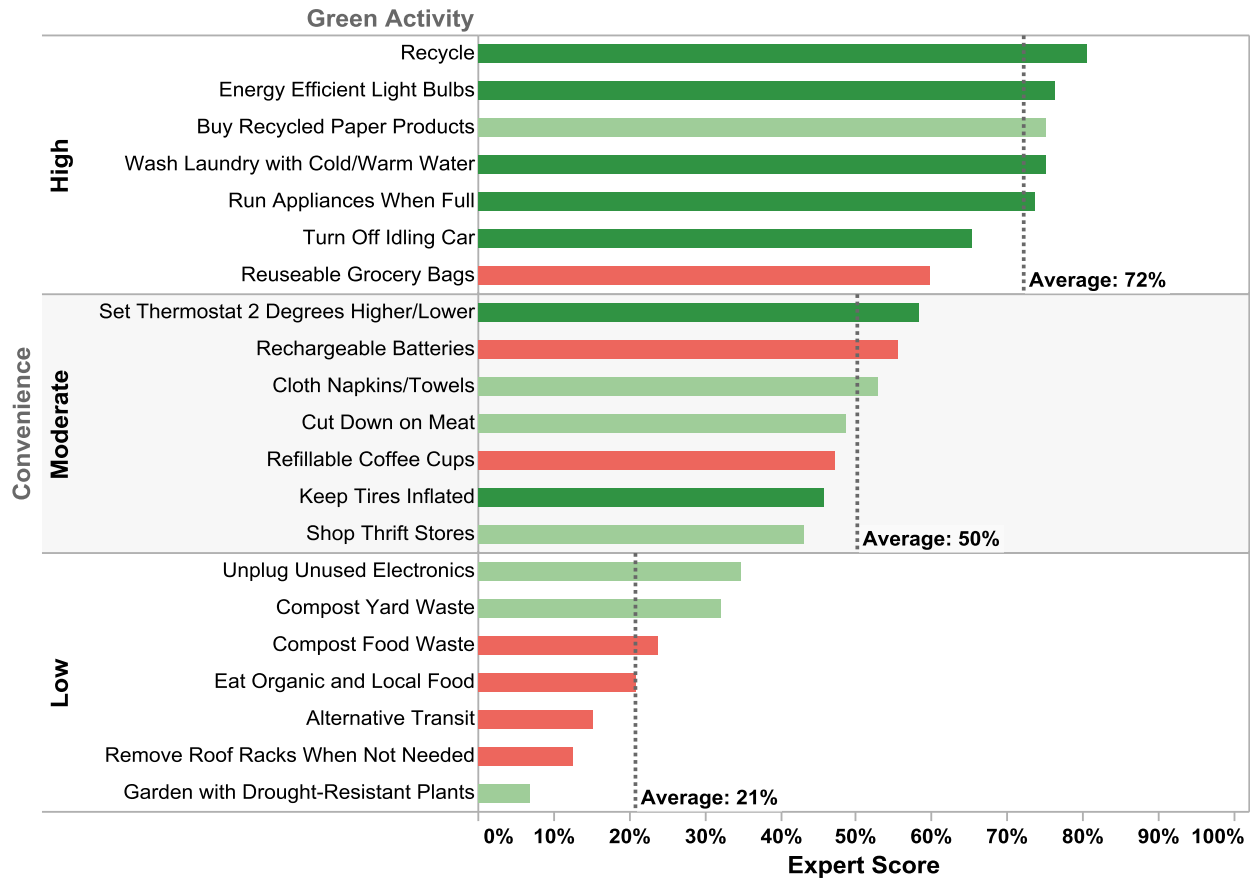


Can we make better predictions of what consumers will do? This leads us to the next category – convenience.

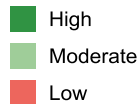
Convenience for the Consumer to Perform

Five of the activities that are high in convenience are also in the High Performance category. The only one in the Low Performance category is *reusable grocery bags*. So far, convenience is the best predictor of which tasks consumers perform frequently.

Expert Ranking of Convenience to Consumer and Performance Frequency in Color



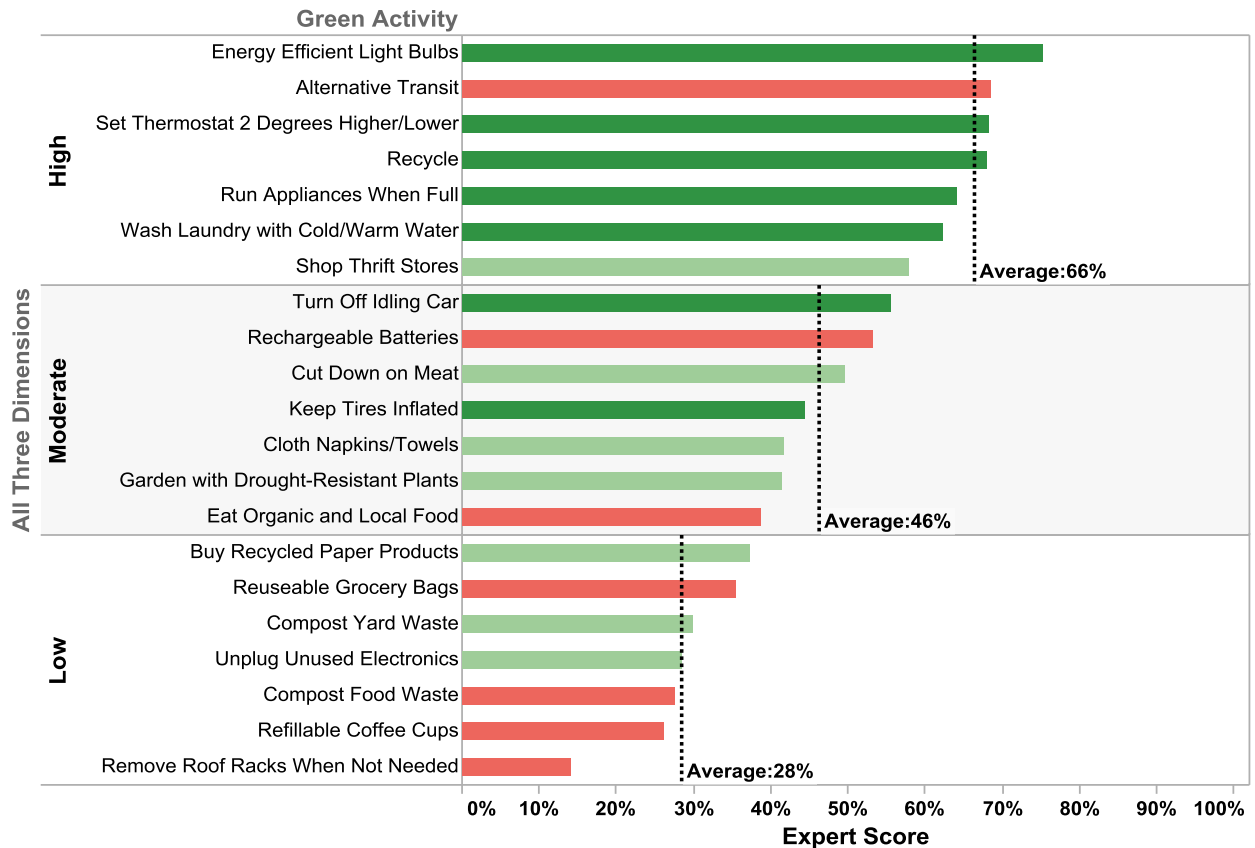
Performance Frequency



All Three Expert Opinion Dimensions Combined

Similar to the Convenience dimension, five activities with high combined rank are also in the High Performance group. But two aren't: *shop thrift stores* (Moderate Performance) and *alternative transit* (Low Performance) – and *alternative transit* is far and away ranked as having the highest benefit to the environment.

Expert Ranking of Three Dimensions Combined with Performance in Color



Therefore, in this specific case, we can best predict what consumers will do by either using the convenience ranking or all three dimensions combined. In predictive modeling, simplest is always best – so we should go with convenience!!

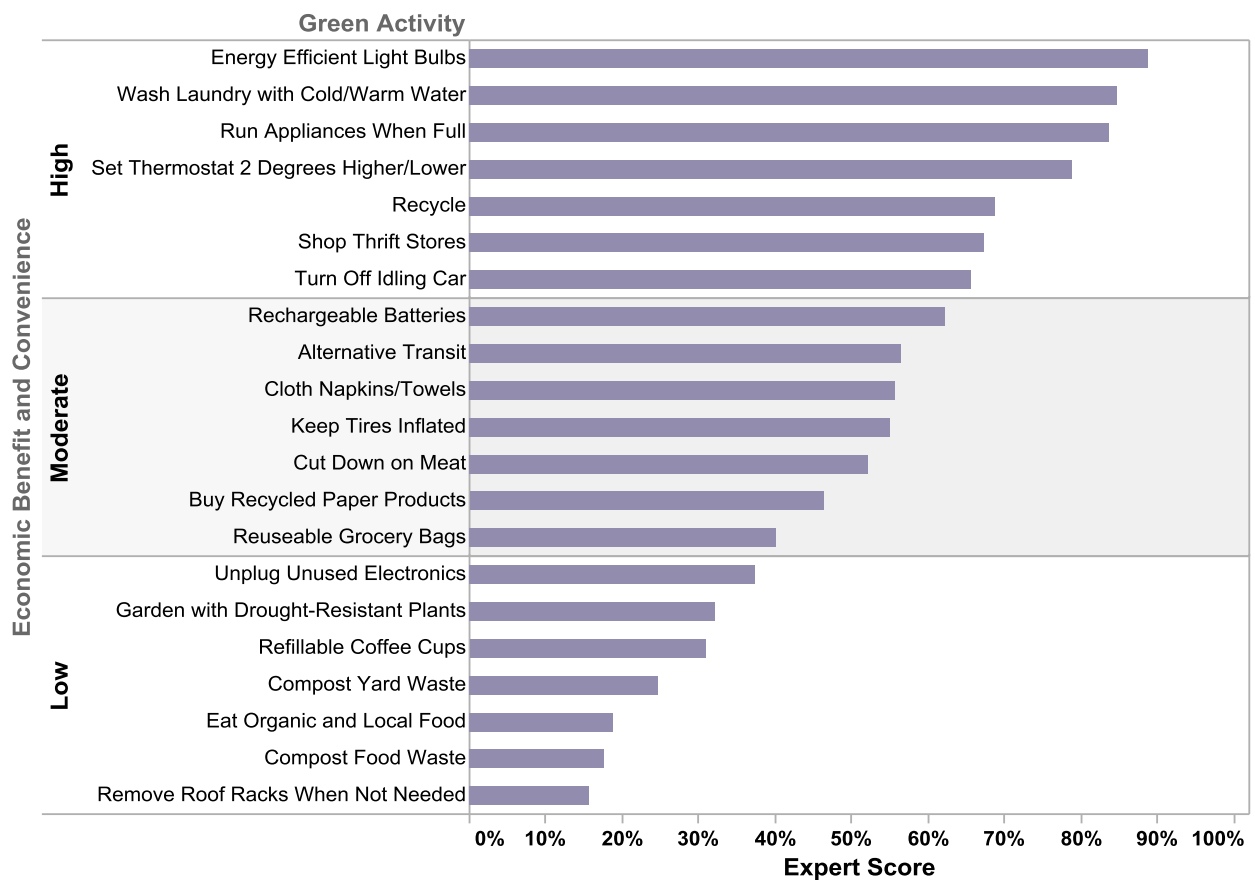
Integrating this Information with Your Green Sustainability Strategy

By varying the list of activities and weighting the dimensions differently, these results can be applied to your community whether the citizens are “newcomers” or “veterans” in dealing with environmental issues. Examples are shown below.

Newcomer Communities

Newcomer communities can start their green programs by prioritizing activities that are convenient and economical for the consumer, which are grouped in the High or Moderate category on the graph. To motivate the consumers to perform them, educational programs or incentives may be used. If the activities are Low in convenience and economic benefit, introduce them after the environmental program has gotten off the ground unless they are heavily financially subsidized.

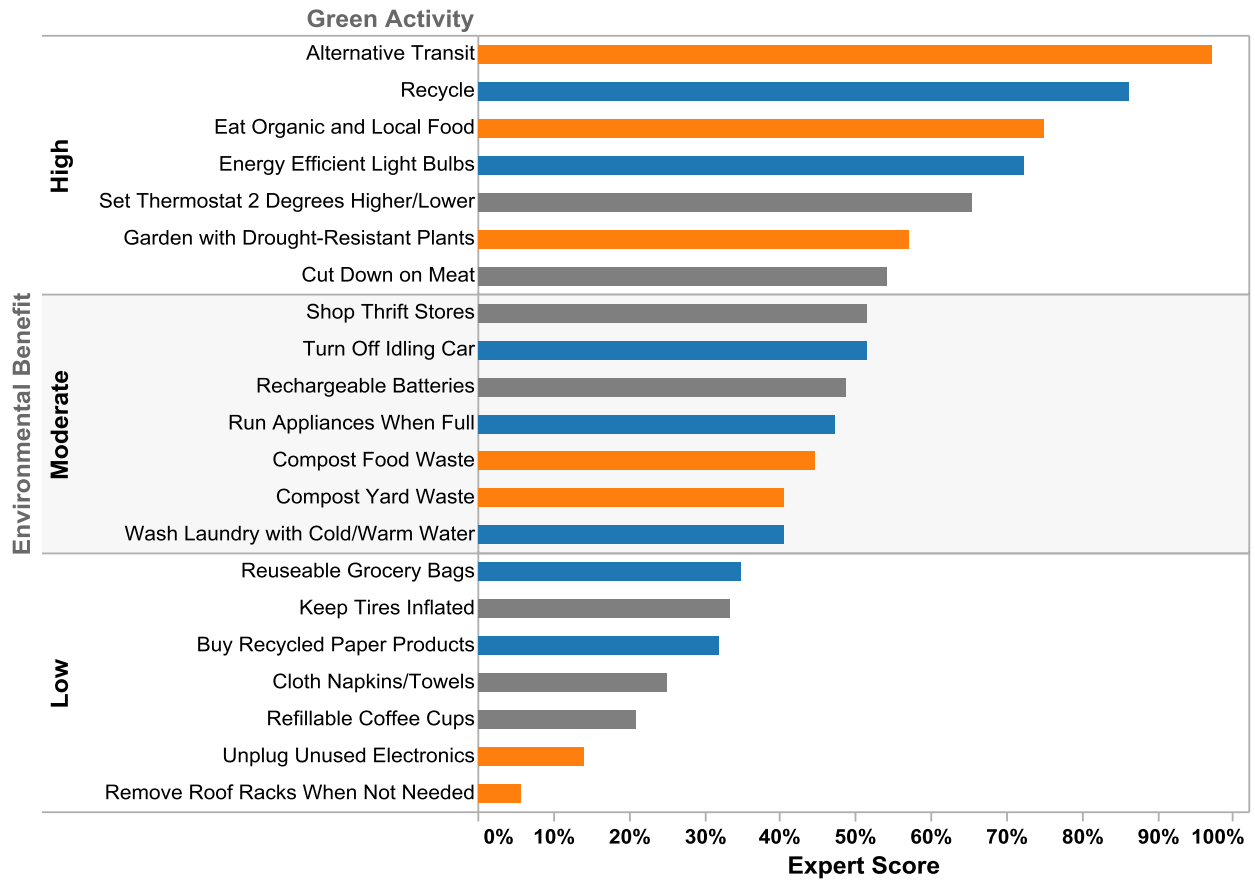
Newcomer Communities: Expert Ranking of Economic Benefit and Convenience to Consumer



Veteran Communities

Veteran communities can prioritize the activities using environmental benefit. Activities that are most convenient can be financially penalized for non-compliance (shown in blue on the graph) and less convenient activities can have incentives (shown in gray and orange).

Veteran Communities: Expert Ranking of Environmental Benefit with Convenience to Consumer in Color



Convenience to Consumer

- High
- Moderate
- Low

Additional Conclusions/Future Directions

- This study is a starting point - it is simpler way of assessing the values of green behaviors, rather than comparing complex measures such as carbon emissions or barrels of oils saved. It also accounts for the crucial aspect of the ease of performing certain tasks - if your work is at all related to natural resource management, then you know that consumer compliance is often the most difficult hurdle!
- A few of the environmental experts commented that it was quite difficult to rank the environmental benefits of the activities, as they are all important. This demonstrates another advantage of this method – it forces experts to choose the most valuable actions, when we often wish to answer that all activities are important!
- This study was based on the behavior of average Americans, but the definition of green behavior greatly varies depending on the culture or part of the country. Local or regional policymakers can tailor this method by varying the activities and using data collected from local consumers and experts.
- Many of these activities are not being performed due to reasons beyond the consumer's control. For instance there may be a lack of alternative transport, lack of access to recycling facilities, or infrastructure issues.
- It is important not to have pre-conceived ideas! For example, one important division of consumers is those that live in or near metropolitan areas versus rural areas. I reran the analyses at this level and found very little difference between the two groups. Interestingly enough, I found higher usage of alternative transit in rural areas compared to metro areas, where you might expect to find the opposite due to access to mass transit.
- Future work can include refining the scale to include more dimensions such as health effects or economic benefit to the community, or by dividing up the original dimensions, such as “immediate benefit to the environment” versus “long-term benefit to the environment”.
- This study was based on a relatively small sample size of experts. Also, in future studies, experts in specialized areas can be included.

Acknowledgements

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