Developing the US Biomass Residential Heating Market: Insights From Research

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ABSTRACT

The objective of this article is to help biomass heating industry in its marketing tasks, by helping the industry segment its consumers so that marketing efforts can be targeted at households that will purchase and use biomass home heating. To achieve this objective, the author classifies US households using structural characteristics (for example, year the home was built) and function or behavioral features of the households (for example, life goals or values of the head of household). Gaining social approval, living an active or exciting life, and a mature understanding of life are the primary motives that influence biomass equipment purchase. One-in-three households in the nation possess these values and hence are the ideal targets for the industry. Since not all geographical locations are equally attractive, the author has developed an interactive computer application that insures that managers target households that meets business goals. Future research on home heating can build on this approach to deduce theorems about consumer purchases of green-energy products.

KEYWORDS

Biomass, Market Segmentation, Residential Heating, Sample Survey, US Households

1. INTRODUCTION

The biomass residential heating industry, being part of the renewable fuels sector, has “industry growth” as the primary objective (Kabir et al., 2018; Fletcher, 2016; Johnson, 2013; Schill, 2013). This is understandable given that fossil fuels still dominate the marketplace, even though biomass is half the price of oil (Crutzen et al., 2016). In order to derive a broad plan of action or strategies to achieving the “growth” objective, the industry has to engage in three types of research in this order (East, 2013; Howard, 1994): (1) Situation audit; (2) Qualitative research, and (3) Quantitative research.

A situation audit consists of background, secondary research into all factors that could affect company or industry performance. Often industry sales over time are studied for co-variation with factors such as industry marketing expenditure and buyer behavior such as number of non-users of the product category in the marketplace (Tomczak et al., 2018).

Qualitative research, or interviews, with potential and actual customers of biomass home-heating products is essential to gain information about people who use those products and their opinions about...
the product category (Glaser, 2017). Findings from qualitative research help identify the products’ benefit perceptions among actual and potential customers.

Adding quantitative research to the prior qualitative research facilitates to: (1) classify more precise target market subgroups or market segments and (2) profile the market segments including their media exposure (Brannen, 2017). Quantitative research consists of a questionnaire survey with a large number of targets, US households in our case. This research brings together the three types of research to help the biomass heating industry in its marketing tasks; the objective is to help the industry segment its consumers so that marketing efforts can be targeted at households that will purchase and use biomass home heating. To achieve this objective we classify US households using structural characteristics (for example, year the home was built) and functional or behavioral features of the households (for example, life goals or values of the head of household).

The rest of the paper is organized as follows. Section 2 reviews past research on renewables and green marketing to ‘anchor’ the present study to ‘foundation’ research on the topic. Section 3 gives an overview of the questionnaire survey including the population of interest, sampling, measurement, and response rate. Section 4 discusses market segmentation. Section 5 aligns benefits with market segments, and Section 6 profiles the segments using psychographics and media exposure measures. Finally, normative prescription for industry growth is provided. This is done by integrating findings from all three types of research: situation audit, qualitative, and quantitative research.

2. BACKGROUND

Extant research on consumer purchases of biomass home heating equipment suggests that the percept, biomass heating, is represented in the mind of the consumer substantively as the object shown in Figure 1. In addition, its properties are conceptualized as “green” and “efficient” (Athiyaman, 2015d). In terms of Aristotle’s form and matter classification the form of biomass heating is the wood stove (Figure 1) and its matter is its adjectival properties.

Our aim is to analyze customer segments for biomass home heating products. Since analysis without “construction” is trivial, we build this research using extant research on consumer purchase behavior of green energy products. We break this knowledge down into empirical truths (for example,

Figure 1. Biomass heating: Percepts and concepts
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