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CREATING LOYAL CUSTOMERS THROUGH SOCIAL RESPONSIBILITY: HOW DO DAIRY CONSUMERS VALUE ISSUE-BASED INITIATIVES?

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Study Highlights for the Dairy Industry:

- ✓ Across a wide variety of corporate social initiatives, consumers prioritized attention to animal welfare as the most important activity for dairy farmers;
 - Product differentiation based on animal welfare may be possible. In the current market-place, consumers associate animal welfare primarily with labels such as USDA Organic, RBST-free, or Validus (a relatively new animal welfare certification);
- ✓ For consumers, USDA Organic and RBST-free are labels that address a broad set of issues ranging from food safety to sustainable agriculture practices.
- ✓ In contrast, labels such as Validus that are more targeted with a singular message of animal welfare could be used more strategically by the dairy industry to successfully transmit animal welfare information, differentiate their product in the market, and collect a price premium given current consumer priorities to address those issues. Results suggest that increased perceptions of animal welfare contributes to WTP for fluid milk by about \$0.07/gal

Businesses commonly seek ways to increase their competitive advantage in the marketplace, and marketing strategies often include differentiation through brands, promotions, label information or placement in popular marketplaces. An increasing number of food companies are creating loyal custom-

ers through connecting to concerns buyers may have about the environment, food safety, community issues and other social issues. This fact sheet explores how the dairy industry could frame their company actions to best match the interests, perceptions and values of dairy consumers.

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What is Corporate Social Responsibility (CSR) in the Dairy Industry?

Corporate Social Responsibility (CSR) is a formal commitment from the part of a private company to decrease the harmful effects it may have on society and the environment. Generally, specific CSR goals or actions are defined for the company to follow in specific areas that are particularly negatively affected by company operations.

Since the early 1990s, companies have been under increased pressure to develop more sustainable business practices and become active partners in the community (Mohr et al., 2001). Increased pressure from consumers, employees, media, and various groups, but also a desire to innovate and differentiate own products in the marketplace have been some of the drivers of this development.

The potential for environmental externalities and the rising consumer awareness of animal welfare issues in livestock operations (Lusk et al., 2011) make the dairy industry a particularly relevant testing ground for CSR-based product differentiation strategies. According to industry sources, large distributors such as Costco and WalMart (Martinez and Kaufman, 2008) have been a major driver of CSR implementation in the dairy supply chain in an effort to reduce the risk of media scandals or other negative publicity. CSR efforts may also be driven by a desire to counter the negative stereotype implying that large, profit-driven companies have little interest in the well-being of their employees and society in general.

Problem: Are consumers interested in CSR?

The popularity of CSR initiatives have been increasing, however, only a minority (21%) actually use a company's CSR position as a purchase criterion (Mohr et al., 2001).

The lack of understanding about consumer's purchases related to CSR raises some potential questions for companies that want to market in the most effective way:

- ✓ What are the most valued CSR actions by consumers in the dairy sector?
- ✓ Can we identify different sub-groups of consumers that have similar CSR values based on their values and life styles?
- ✓ Do consumers value CSR actions enough to pay a price premium for them?

- ✓ Given the lack of standardized CSR information labeling, how does CSR information reach consumers?

Study Approach

The principal objectives of this study are:

- I) To assess consumer preferences and priorities for specific CSR initiatives in dairy operations,
- II) To examine if and how existing, commonly used milk labels convey information related to CSR activities, and
- III) Determine whether willingness to pay (WTP) for fluid milk increases when specific CSR activities are implemented.

A survey of milk consumers recruited amongst Colorado State University (CSU) was carried out in the summer of 2011. A total of 96 individuals and the survey was administered via computer on CSU premises. In addition to a section soliciting socio-demographic information, the survey consisted of three types of tasks, which directly relate to each one of the stated research objectives:

- I. In a best-worst exercise (Finn et al., 2006) participants ranked, by perceived importance, the involvement of an hypothetical dairy firm in nine alternative CSR areas of effort: animal welfare, energy consumption, water consumption, air pollution, community involvement, employee opportunities, local operation, waste management, and sustainable agricultural practices.
- II. The description of each CSR activity provided to the participants is reproduced in Table 1.
- III. Next, participants were asked to use a quantitative scale (from -5 "much worse" to + 5 for "much better", in increments of one) to express how fluid milk displaying a specific label certification (USDA Organic, RBST-free, Validus, and Local Colorado Proud) was perceived to perform in the nine selected CSR areas.
- IV. Finally, for each of the four mentioned labels participants used a sliding bar tool (from -\$2.00 to +\$2.00 in increments of 10c) to express how much more/less they would be willing to pay for a gallon of milk displaying

Table 1. CSR Activities Included in Study

Dairy CSR Activities	Description
Animal welfare	There is a commitment to maintaining animal health through monitored nutrition and on-staff veterinarians, and reproduction by natural breeding rather than artificial insemination. Also, animals are kept outdoors on pastures rather than enclosed barns.
Energy consumption	Refers to the use of energy saving equipment in milk processing, and also to making transportation of milk to processing plants and retailers more energy efficient.
Water consumption	Implement recycling water programs through a water treatment facility and save water by using limited irrigation schedules to irrigate pastures and crops.
Air pollution	Manage the release of bovine methane by encouraging managed grazing and carbon soil sequestration. Also, decrease air pollution by making milk transportation from farm to plant and retailer more fuel efficient.
Community involvement	Company should be involved in charitable organizations, should implement volunteering days, and create and support local community programs.
Employee opportunities	The company should provide fair or above market wages, medical benefits, vacations, and retirement plans to employees. Employee advancement in company hierarchy is encouraged, as well as diversity in the workplace.
Local operation	The company uses local resources and generates local growth. The local economy is stimulated by creating jobs locally.
Waste management	Waste management refers mainly to composting solid waste to be used as fertilizer and monitoring waste runoff to the local water table.
Sustainable agricultural practices	Commitment to maintaining good soil health for a sustainable future of the business and the environment. Soil health implies practices such as the use crop rotation; using compost as natural organic fertilizer, and never using chemicals in maintaining a fertile soil.

the label (USDA Organic, RBST-free, Validus, and Local Colorado Proud), compared to a gallon of milk without it. The exercise was then repeated, but, rather than their own valuation, participants were asked to estimate how much the general consumer population would be willing to pay for the label.²

What we Learned

The study sample statistics provided in Table 2 are comparable to state of Colorado demographics provided by the US Census Bureau (US Census Quick facts, 2012).

CSR Priorities for Consumers

Table 3 presents the overall ranking of the CSR activities obtained from the best-worst exercise. The overwhelming majority of participants stated that

a dairy's investment in improving Animal Welfare practices is the most important CSR activity. Next, sustainable agriculture practices, showing the company's commitment to maintain good soil health, ranks second. The third issue of high importance to consumers is energy consumption. According to our results, the least important activities are water management (somewhat surprising in Colorado—a water deficit state) and community involvement.

We also find evidence of heterogeneous preferences amongst consumers. That is, a specific CSR activity may not be very important for the general population, but be extremely significant for a niche of consumers. For example, "local" was voted most important practice in 100 times (third highest in terms of "best" votes) but its overall rank is 7th. Similarities in individual ranking patterns between consumers can be used to identify groups of consumers (segments) with similar priorities.

Table 2. Sample Characteristics

Characteristic		% of Sample
Gender	Male	26.04
	Female	73.96
Race	White, Non-Hispanic	83.33
	Black, Non-Hispanic	4.17
	Hispanic	5.21
	Asian	2.08
	Other	5.21
Education	Some technical, business school or college	9.38
	Completed B.S., B.A. or College work	29.17
	Some graduate work	10.42
	Graduate degree (Ph.D., M.S., M.D., J.D., etc)	48.96
	High school graduate or equivalent	2.08
Household income	Less than \$20,000	2.08
	\$20,000 to 34,000	10.42
	\$35,000 to 49,000	18.75
	\$50,000 to 74,000	30.21
	\$75,000-99,000	18.75
	\$100,000-124,000	7.29
	\$125,000- \$149,000	7.29
Over \$150,000	5.21	

² Research shows that individuals tend to over-state their WTP on socially desirable issues (Fisher, 1993), their peers' WTP can offer a more realistic statistic.

Table 3. Consumer Ranking of CSR Activities.

Attribute	Best	Worst	Best-Worst	Rank
Animal Welfare	508	-10	498	(1)
Sustainable Ag. Practices	215	-18	197	(2)
Energy Consumption	62	-51	11	(3)
Waste Management	61	-67	-6	(4)
Employee Opportunities	68	-84	-16	(5)
Air Pollution	27	-66	-39	(6)
Local Company	100	-209	-109	(7)
Water Management	19	-144	-125	(8)
Community Involvement	11	-420	-409	(9)

In order to identify consumer segments, we used a clustering technique that identifies similarities in the pattern of best-worst responses to group like-minded consumers and then named those groups based on observed patterns (Bond et al., 2008). CSR preferences within each group as well as group characteristics are provided in Table 4. Two specific consumer sub-groups emerge from the results: one emphasizes local business, equal opportunities for employees, and sustainable agricultural practices; while the other prioritizes air pollution, energy consumption, water quality, and waste management. The CSR preferences of the third group (Mixed) are quite similar to the ones we previously identified for the general population, so consider this group as “average” consumers.

The Mixed group represents the bulk of our sample (60%) and despite their relatively smaller household income, their average own WTP for milk labels is second highest. They are also heavy milk drinkers (72.5% drink it “Often”). Plain milk consumption patterns of our sample are provided in Figure 1.

The first group of “niche” consumers prioritizes outcomes which the individual firm can accomplish independently (e.g. enforcing equal opportunities for their employees). We label this cluster as the “local” group as the beneficiaries of these CSR activities are more likely to be the local communities and employees of the company. The second group prioritizes more “global” or collective outcomes: air and water quality, energy consumption, and proper waste management imply the concerted efforts of a large number of firms. The beneficiaries of these CSR activities are not only the communities around the

firm, but also the general world population and ecosystems.

The local development consumer cluster has a high household income, the highest average own willingness to pay (WTP) for milk labels and 85.7% of them drink milk “Often”. However, this is a rather small segment (22%) of our sample.

Do Milk Labels Convey CSR Information?

Product labels may be a vehicle for transmitting CSR involvement information in a grocery store setting where consumer purchase decisions are made. Figure 2 shows how existing labels/certifications map into perceived CSR outcomes (averaged across study participants), thereby depicting a profile of the information carried by each label. Visually, the closer the shape moves toward a criteria, it signals that consumers were more likely to associate that label with impacts on the CSR outcome.

Results suggest that the Organic label is positively associated with animal welfare, energy, sustainable agriculture, waste management, taste, nutrition. The RBST-free label strongly maps to taste, safety and nutrition, and mildly into animal welfare, energy and sustainable agriculture. The Colorado Proud labels is associated with reduced air pollution, community involvement, local business, and taste, while the Valibus label transmits strong information cues about animal welfare, and minor signals regarding employee opportunities, sustainable agriculture, waste management, taste, safety, and nutrition.

Table 4. CSR Preference by Cluster.

Cluster	Local Development (22% sample)	Global Impact (18% sample)	Mixed (60% sample)
Rank	1. Animal Welfare 2. Local Business 3. Employee Opportunities 4. Sustainable Ag. Practices 5. Energy Consumption 6. Water Management 7. Air Pollution 8. Waste Management 9. Community Involvement	1. Animal Welfare 2. Sustainable Ag. Practices 3. Waste Management 4. Energy Consumption 5. Water Management 6. Air Pollution 7. Employee Opportunities 8. Local Business 9. Community Involvement	1. Animal Welfare 2. Sustainable Ag. Practices 3. Energy Consumption 4. Air Pollution 5. Employee Opportunities 6. Waste Management 7. Local Business 8. Water Management 9. Community Involvement
HH Income	High (24% over 100K, 81% over 50K)	Medium (average 50k)	Low (majority 55% under 49k)
Age	Middle Aged (66% between 40-60yr)	Young & Old (extremes, 52% under 39yr, 33% over 50yr)	Young (59% under 39yr)
Education	High and low (graduate, college 67%, and the rest technical, high school only)	Generally high (graduate, college 76.5%)	Highly educated (graduate, college 83%)
WTP	Highest (avg. \$0.837)	Lowest (avg. \$0.525)	2 nd highest (avg. \$0.7)
Milk Consumption	Highest (85.7% drink it “Often”)	Lowest (47% drink it “Often”)	2 nd highest (72.5% drink it “Often”)

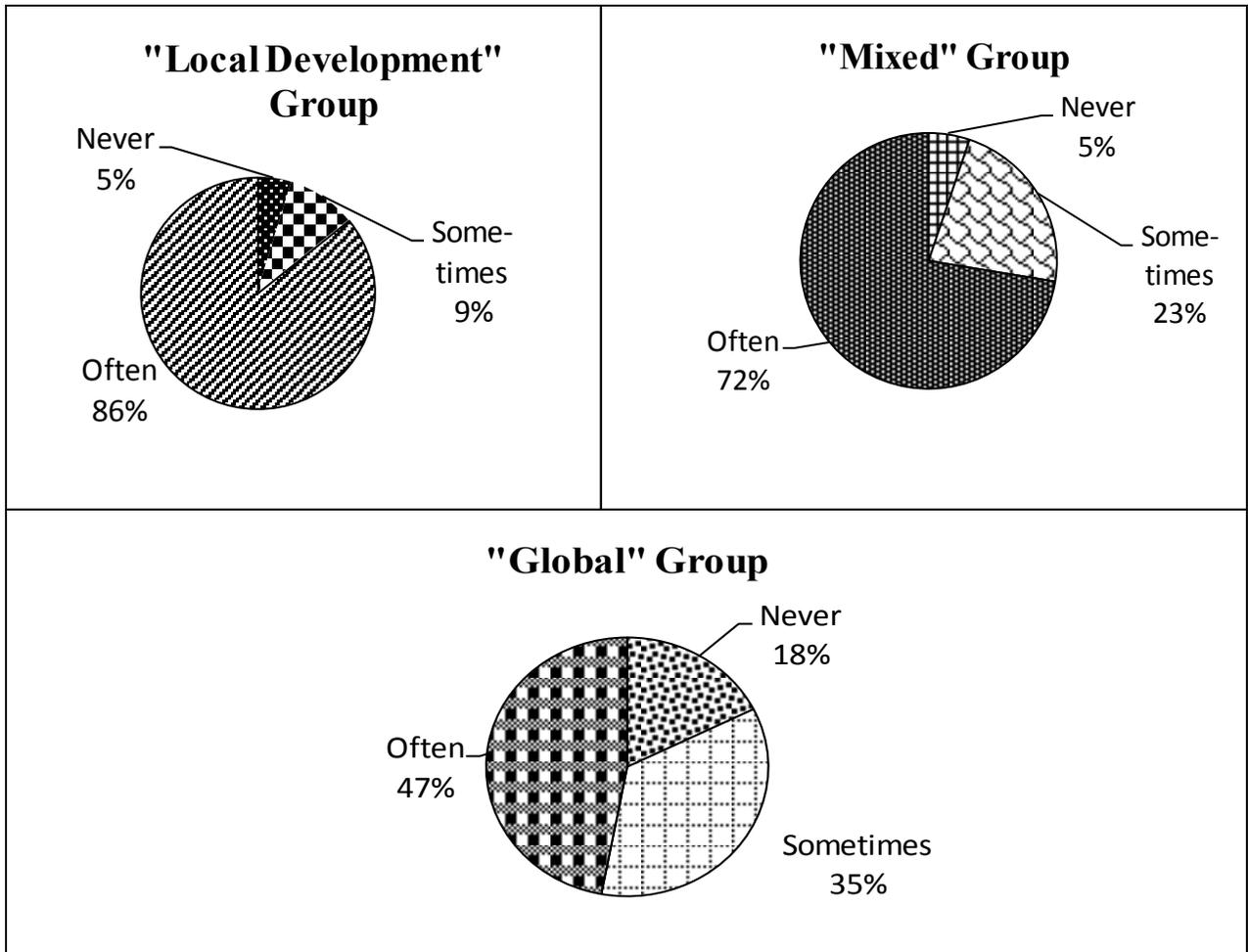


Figure 1. Milk Consumption by Cluster.

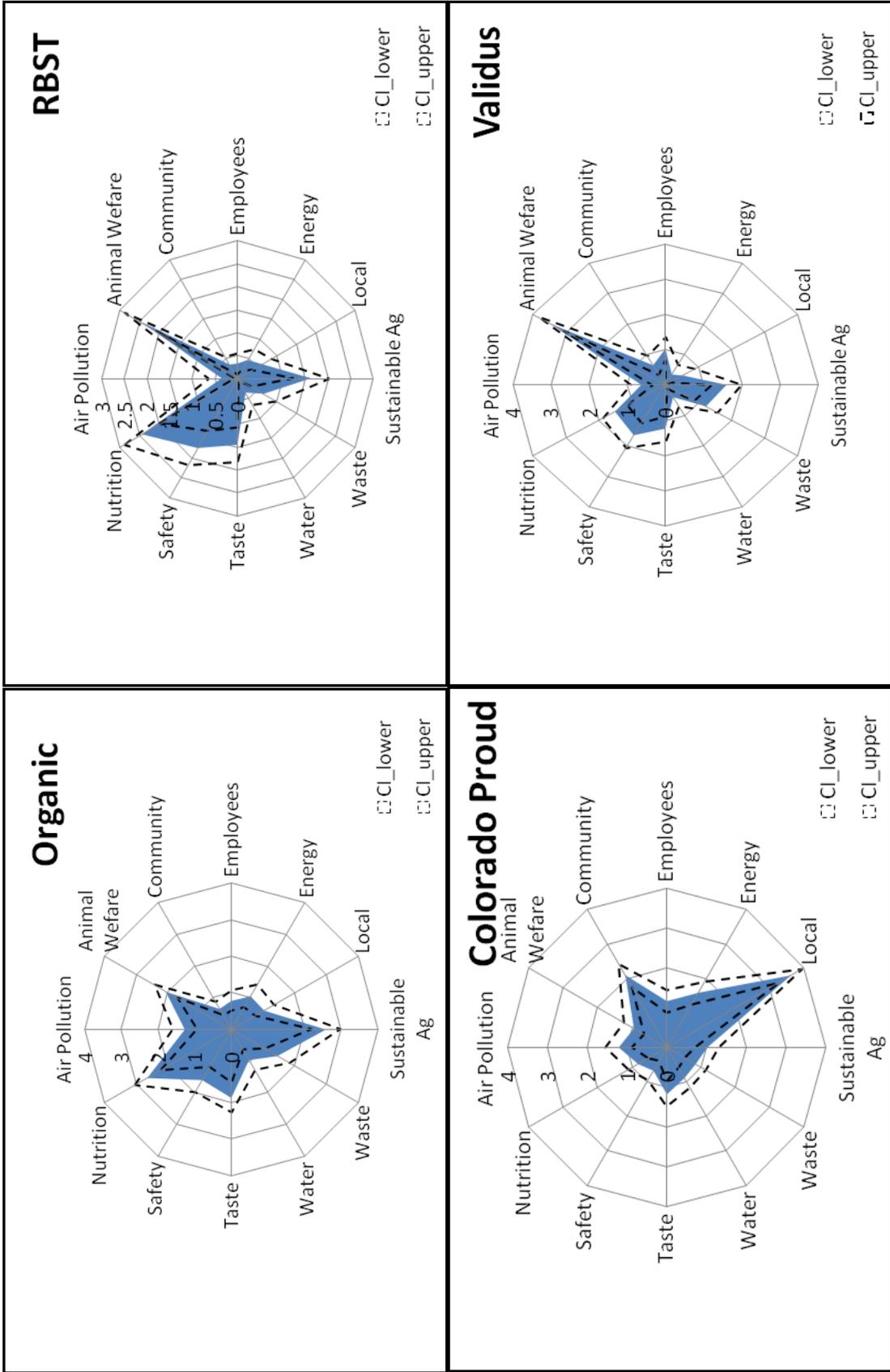


Figure 2. How CSR Perceptions Relate to Existent Milk Labels.

Examining Figure 2, we note that milk labels can be categorized according to the dimensionality of the information carried. Multidimensional labels (e.g. Organic) communicate cues mapping into a wide spectrum of outcomes and may have the advantage of appealing to a large number of consumers having various preferences. In contrast, unidimensional labels (Colorado Proud, Validus) present a single major “spike” in one product attribute and may have the advantage of transmitting a more focused message to consumers.

Can CSR Claims translate to price premia in the marketplace?

In the following analyses, we try to establish a link between consumer preference for CSR actions, consumer perceptions of these labels, and consumer valuation of existing milk labels as vehicles for transmitting CSR information in the store at the moment of purchase.

In our first model, (Model 1) we investigate if and how any of the CSR and non CSR factors included in our study influence consumer WTP for fluid milk I using peer (rather than personal) WTP for each of the four labels in our study. Results from this model (Table 5) show that the only CSR activity that is positive and statistically significant in affecting willingness to pay is animal welfare. We estimate that, across the four labels, increasing animal welfare perceptions by one unit (on an importance scale of 1 to 5) contributes to WTP by an average of \$0.07 per gallon of milk. CSR activities that do not influence WTP are either not valued by consumers, or are not sufficiently conveyed by the labels.

Estimates of the label-specific fixed effects are presented in Table 6. Controlling for the CSR contribution to valuation, all the other (non-CSR) contributions collect a WTP amounting to \$0.53 per gallon for the Colorado Proud label, \$0.44 per gallon for the Organic label, \$0.32 per gallon for the RBST-free

Table 5. Pooled Label Valuation Model.

WTP of Others	Estimate	t-stat
Air Pollution	0.026	0.98
Animal Welfare	0.068***	3.32
Community Involvement	0.02	0.78
Employee Opportunities	-0.025	-0.1
Energy Consumption	-0.015	-0.57
Local Business	0.005	0.21
Sustainable Ag. Practices	0.009	0.44
Waste Management	0.037	1.42
Water Management	-0.033	-1.13
Taste	0.018	0.79
Safety	-0.013	-0.66
Nutrition	-0.007	-0.30
Organic Label	0.444***	6.22
Validus Label	0.201**	2.6
RBST Label	0.314***	4.49
CO Proud Label	0.453***	5.15
Obs	350	
Adj. R2	0.546	

***Significant at 1% level, **Significant at 5% level

Table 6. WTP Estimates for Fluid Milk Labels and Perceived CSR Outcomes.

Label	Average Valuation (\$)	Valuation Attributable to non-CSR outcomes (\$)	Valuation Attributable to CSR
CO Proud	0.55	0.45	0.10
USDA Organic	0.64	0.44	0.20
RBST-free	0.49	0.32	0.17
Validus Animal Welfare	0.46	0.20	0.26

label, and \$0.20 per gallon for the presence of the Validus label. The contribution of the CSR-related consumer perceptions to label valuation is presented in the last column of the table. The valuation attributable to CSR outcomes is largest for the Validus label (\$0.26), followed by the Organic label (\$0.20). If introduced in the market the Validus label has the potential, among the labels investigated, to collect the highest price premium due to CSR perceptions.

Lessons on Corporate Responsibility as a Marketing Tool for the Dairy Industry

In this study, we investigated three dimensions of consumer perceptions of CSR activities relevant to the dairy industry. First, we ranked nine alternative CSR activities according to consumer priorities and preferences. While ranking heterogeneity among consumers does exist, animal welfare is identified as the most preferred CSR activity by study participants and a top priority for dairy farms. This result is not surprising in the context of increased consumer awareness of feedlot operations mistreating animals (Lusk et al., 2011). However, it is not yet clear to what extent consumers are motivated by concern for the animal or concern about the impact of the animal's quality of life on the food product (Harper, 2002).

Other CSR areas such as sustainable agricultural practices, energy consumption, and waste management are ranked as second, third, and fourth in importance to consumers. Conversely, company involvement in the community has the lowest priority amongst consumers, but a small set of consumers are motivated by such local issues.

Survey respondents were divided with respect to their CSR preferences into the "niche" sets of consumers who favor local (employee opportunities, sustainable agricultural practices) or global (air or water

pollution) actions. However, we have no evidence that taking action in reaching these consumers directly will result in higher WTP for fluid milk, given the WTP results discussed above.

In the second part of the study, common milk labels such as the USDA Organic, CO Proud, RBST-free and Validus (animal welfare) are shown to carry information about CSR initiatives. Results suggest that the choice of milk label can either help reach a large mass of consumers by appealing to a broad range of preferences without arising an in-depth awareness of either (multi-dimensional labels); or it can deliver a focused message to consumers (one-dimensional labels). For example, the USDA Organic covers a broad range of issues and may appeal to multiple consumer groups having various preferences, while the Validus and the CO Proud labels have the advantage of transmitting a clear and consistent message to some specific consumers interested in a single issue.

The valuation part of the study reveals that, while consumers associate milk labels with CSR initiatives, there is no clear evidence of product differentiation (existence of a price premium) for most CSR claims. However, animal welfare is one exception in this study where label perceptions related to a CSR claim contribute to the valuation of investigated labels. The marginal effect of increasing label perceptions of animal welfare by 1 unit (on an importance scale of 1 to 5) contributes to WTP by an average of \$0.07 per gallon of milk for all investigated labels (Table 5). However, the vehicle for transmitting this information is also important. For example, even though animal welfare maps into both the Organic and RBST-free labels, it may not appear contribute to their valuations. However, animal welfare perceptions transmitted through the Validus label, have the potential to secure the highest price premium (\$0.26).

In short, animal welfare is an issue that is of importance and value to a fairly large set of dairy consumers, with other CSR initiatives of interest and value to smaller sets of consumers (who can be the recipient of more targeted promotion and marketing activities). So, there is potential for dairy to use CSR to gain market advantage, but any firm must carefully consider how their choice of certifications, label choices and positioning in markets frequented by certain groups of consumers will influence their success in promotion CSR.

Works Cited

- Bond, A. C., Thilmany, D., Bond, J. K. 2008. Understanding consumer interest in product and process-based attributes for fresh produce. *Agribusiness* 24(2): 231–252, Spring
- Center for US Dairy, 2010. US Dairy Sustainability Commitment Program, December, Report 12-2012. Available at: <http://www.usdairy.com/Sustainability/Measurement/Pages/Reporting.aspx>
- Finn A. Louviere, J. 2006. Determining the Appropriate Response to Evidence of Public Concern: The Case of Food Safety. *Journal of Public Policy* 11(2): 12-25
- Fisher, Robert J., 1993. Social Desirability Bias and the Validity of Indirect Questioning, *Journal of Consumer Research*, Vol. 20 (2), Sep., pp. 303-315
- Lusk, J., Norwood, F. B. 2011. Speciesism, altruism and the economics of animal welfare, *European Review of Agricultural Economic*, pp. 1-24
- Martinez, S. and P. Kaufman. Twenty years of Competition Reshape the U.S. Food Marketing System. *Amber Waves*. April 2008.
- Mohr, L.A., Webb, D.J., Harris, K., 2001. Do consumers expect companies to be socially responsible? The impact of corporate social responsibility on buying behavior. *Journal of Consumer Affairs* 35(1): 45-72
- Öberseder, M., Schlegelmilch, B. B., Gruber, V. 2011. Why Don't Consumers Care About CSR? A Qualitative Study Exploring the Role of CSR in Consumption Decisions. *Journal of Business Ethics* 104:449-460
- U.S. Census Bureau: State and County QuickFacts. 2012. Data derived from Population Estimates, American Community Survey, Census of Population and Housing, State and County Housing Unit Estimates, County Business Patterns, Nonemployer Statistics, Economic Census, Survey of Business Owners, Building Permits, Consolidated Federal Funds Report; Last Revised: 17-Jan-2012