Meat and Muscle Biology™

Estimation of Relationships Between Demographic Characteristics and Consumers' Willingness to Pay for Beef

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Objectives

The objective of this study was to determine the relationship between consumer demographic characteristics and willingness to pay for beef.

Materials and Methods

Data were collected from consumers ($n = 4080$) from April to December 2018 in conjunction with consumer eating quality assessments in Lubbock, TX. All beef samples were prepared and demographics and willingness to pay (WTP) questionnaires were administered in accordance with Meat Standards Australia protocols. The following demographic characteristics were collected: age, gender (GEN), occupation (OCC), consumption (CONS), number of adults in household (NOA), number of children (NOC), beef preferences (PREF), preferred degree of doneness (DOD), income (INC), education (EDU), and heritage (HER). At the conclusion of a tasting session, which consisted of 7 beef samples prepared and served as steaks, smoked brisket, or fajita strips, consumers were asked how much they would pay for each of the four quality levels [Unsatisfactory (UNS), Good everyday (GOOD), Better than everyday (BTE), and Premium (PREM)], using line scales anchored from $0/lb. to $40/lb. Data were analyzed using the STEPWISE option of PROC REG of SAS. Variables had to meet a 0.15 significance level for entry and to remain in the model. Willingness to pay data were analyzed using PROC GLIMMIX of SAS with fixed effects of quality level, cook method, and their interaction ($\alpha = 0.05$).

Results

Regression analysis revealed that demographic characteristics accounted for 6, 7, 6, and 7% of the variation in willingness to pay for UNS, GOOD, BTE, and PREM quality beef, respectively ($P < 0.01$). For UNS, increasing AGE, CONS, NOA, PREF, and DOD were positively linked with WTP, while GEN, NOC, INC, and EDU were negatively linked with WTP ($P < 0.15$). Increasing CONS, NOA, and PREF elevated WTP for GOOD quality, while AGE and EDU had a negative impact ($P < 0.15$). For BTE quality, NOA, PREF, INC, and GEN positively influenced WTP, while AGE, NOC, and EDU reduced WTP ($P < 0.15$). Finally, increasing CONS, NOA, PREF, and INC resulted in greater WTP of PREM quality beef, but AGE and NOC were negatively linked ($P < 0.15$).

An interaction between quality level and cook method was observed for WTP ($P < 0.01$). Consumers were willing to pay the most for PREM quality with significant differentiation between each quality level (PREM > BTE > GOOD > UNS). Overall, consumers were willing to pay $17.84, $12.96, $8.65, and $3.80 for PREM, BTE, GOOD, and UNS, respectively. However, within quality level, consumer WTP varied due to cook method. For PREM and UNS WTP, consumers were willing to pay more ($P < 0.05$) for samples cooked as steaks and fajitas than as brisket. For BTE and GOOD WTP, consumers were willing to pay more ($P < 0.05$) for samples cooked as steaks than as brisket, but WTP of fajita samples was similar ($P > 0.05$) to the other cook methods.

Conclusion

Demographic characteristics can account for a small proportion of the variation in consumer WTP for beef products. Increasing age, number of children, and education consistently had negative impacts on WTP, regardless of quality level. Conversely, increasing beef consumption and preferences, along with number of adults lifted WTP across all quality levels. Cook method also influenced consumer WTP within each quality level.