

**Extended Abstract**  
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<b>Paper/Poster Title</b>	<b>Customisable or local? Consumers' preferences and willingness for the characteristics of fruit and vegetable box schemes in Scotland</b>
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**Abstract prepared for presentation at the 96<sup>th</sup> Annual Conference of the Agricultural Economics Society, K U Leuven, Belgium**

**4<sup>th</sup> – 6<sup>th</sup> April 2022**

<b>Abstract</b>	<b>200 words max</b>
<p>The demand for fruit and vegetable boxes (FVB) has increased sharply (111%) as a result of the Covid19 pandemic. Nonetheless, there is a growing fear that FVB schemes may increase food waste at home as, for example, many of the available fruit and veg boxes are not fully customisable. A choice experiment-based survey with 500 Scottish consumers was conducted to estimate consumers' preferences and willingness to pay for strategies (e.g., completely customisable fruit and veg boxes) that can help reduce food waste that may result from the purchase and use of FVB. The preliminary results showed that customisability is a major barrier that is deterring over 80% of consumers from buying FVB. The sample consumers were found to be willing to pay a substantial price premium to improve the customisability of the FVB. Other FVB's attributes that are frequently promoted by the sellers of FVB were found to be significantly less valued by the sampled Scottish consumers.</p>	
<b>Keywords</b>	Food waste, local, organic, consumer, willingness to pay
<b>JEL Code</b>	Q13
<b>Introduction</b>	<b>100 – 250 words</b>
<p>A recent phone survey of fruit and vegetable box schemes across the UK showed sales of fruit and vegetable boxes (FVB) increased by 111% in six weeks as a result of the Covid19 pandemic. Nonetheless, there is a growing fear that FVB schemes may increase food waste at home as, for example, many of the available fruit and veg boxes are not fully customisable (in terms of product types and quantities). This study will conduct a choice experiment-based survey with 500 Scottish consumers to (1) determine the benefits and the limitations of the fruit and veg box schemes in the eyes of Scottish consumers, (2) estimate consumers' preferences and willingness to pay for strategies (e.g., completely customisable fruit and veg boxes) that can help reduce food waste that may result from the purchase and use of fruit and veg boxes, and (3) assess how the estimated preferences and WTP values vary across different consumer segments so that they can be subsequently targeted with tailored interventions through their socio-demographic characteristics.</p>	
<b>Methodology</b>	<b>100 – 250 words</b>
<p>The data was collected using an online choice experiment-based survey. A choice experiment is a quantitative research technique that involves asking individuals to state their preference over hypothetical alternative scenarios, products or services. In this study, the FVB are different only in six attributes of two levels each, except the price</p>	

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(4 levels): packaging (recyclable/no label), origin (Scottish/no label), customisability (customisable/no label), type of production (organic/no label), food waste (reduced food waste/no label), price of a 5kg of fruits and vegetables (£18, £21, £24, and £27). Regarding the design of the choice experiment, the Ngene Software was used to generate a Bayesian D-optimal design that allows robust estimation of all main and two-way interaction effects. The final design consisted of 24 choice sets of three alternatives each (i.e., two fruit and vegetable box alternatives and the opt-out alternative). To make the choice task cognitively easier for respondents, the choice sets were presented in four blocks (i.e., six choice sets per respondent). In addition to collecting data on consumers' choices, the survey for the choice experiment was also used to collect information on respondents' socio-demographic characteristics as well as their purchasing habits and attitudes toward food waste and sustainability-related issues. The sample is representative of the Scottish population in terms of age, gender, education level, and employment status. The choice data were analysed within a random utility framework (Lancaster, 1996). In particular, the mixed logit model and the latent class model are being used to estimate, among others, consumers' preferences and WTP for the different attributes of FVB schemes. In this abstract, only preliminary results are reported. However, the data analysis will be completed soon, and the full set of results will be presented at the conference if this abstract gets accepted.

<b>Results</b>	<b>100 – 250 words</b>
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The preliminary results showed that 18% of the sampled consumers are buyers of FVB. Sixty-three per cent of them revealed to buy FVB at least once a week. Forty-five per cent of the buyers of FVB also mentioned that their purchases of FVB have increased significantly since the beginning of the Covid 19 pandemic. Furthermore, the buyers of FVB mentioned the following factors as the main incentives for buying FVB: “more environmentally friendly”, “taste better”, “safer”, “more likely to be seasonal”, “way to support local and small-scale producers”, and “help me to reduce food waste”. Eighty-two per cent of the sampled consumers described themselves as non-buyers and non-consumers of FVB. They mentioned the following factors as the main barriers to the purchase of FVB: “freshness of the product is not guaranteed”, “fruit and vegetables are not always local”, “FVB are expensive”, “most of the fruit and vegetable are not customisable”, “the quality of the fruit and vegetables in the box is variable”, and “it is difficult to consume all the fruits and vegetables before the ‘best before date’”. The results from the estimation of the choice model showed that the labels “Customisable” and “Recyclable” are the most valued labels in the eyes of the sampled consumers, while “Organic” is the least valued label. In particular, Respondents were found to be willing to pay £4.66, £4.57, £3.19, £2.86, and £2.42 for the labels “Recyclable”, Customisable”, “Scottish”, “Reduced waste”, and “Organic”.

<b>Discussion and Conclusion</b>	<b>100 – 250 words</b>
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Most of FVB schemes in Scotland mainly promote their fruits and vegetables as local and organic. Very few of them allow buyers to choose the type and the quantity of fruits and vegetables to be included in the box. The findings from this study suggest that customisability is one of the most valued attributes of FVB by Scottish consumers. Interestingly, the customisability of the FVB was found to be significantly more valued by consumers than other frequently promoted FVB's attributes, such as organic and the locality of the product. The non-customisability of many of the current FVB schemes was also mentioned by most of the sampled consumers as one of the major

barriers that are deterring them from buying FVB. Therefore, the results suggest that the demand for FVB can be boosted if they are made customisable. This may also contribute to the reduction of food waste due to the fact that consumers will be able to buy only the fruits and vegetables they want to consume. The demand for customisable FVB can be further increased if FVB are also labelled as “Recyclable”, “Scottish”, “Reduced waste”, and “Organic”. Nonetheless, it is noteworthy that the providers of FVB do not have full control over the supply of fruits and vegetables, especially if they are exclusively selling local and organic fruits and vegetables. Many of the fruits and vegetables sold in the UK are imported and/or not organic. Are consumers willing to sacrifice Scottishness of FVB for customisability, and to what extent? This is one of the questions that the ongoing data analysis is trying to answer.