Deliverable 4.2

Report on Stakeholder preferences and contextual values elicitation

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Abstract	D4.2 Given that stakeholders' perceptions for new business models are not generated in a vacuum but rather through the discussion with experts and peers or the interaction with other actors within the supply chain, the process of deliberation is very important to understand the dynamics that shape the preferences of the supply chain. This task uses preference elicitation methods along with deliberation to help improve the design of such methods and to target research activities towards improving general understanding of how preferences are shaped.
Keywords	Choice Experiment, Stakeholder preferences, Deliberation, Social Preferences, Difference Aversion, Efficiency, Inequality Aversion, Maximin Criterion,

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EXECUTIVE SUMMARY

Deliverable 4.2 provides a comprehensive analysis of stakeholder preferences in agricultural supply chains in France, Morocco, and Spain. The study uses an experimental approach that combines a discrete choice experiment (DCE) with a deliberative process to explore how preferences for different aspects of supply chain performance are shaped by deliberation. It focuses on six agricultural products: figs and chestnuts in France, carob and dried figs in Morocco, and tomatoes and figs in Spain. For each product, we estimate Multinomial Logit (MNL) and Random Parameters Logit (RPL) models to capture the preferences of different actors in the supply chain.

Our findings reveal a general preference for scenarios where the retailer price significantly exceeds the production cost, indicating a preference for higher overall profit margins. This suggests that business models that create value-added products, improve efficiency in the production process, and target niche markets willing to pay a premium for certain product attributes, could be successful in these contexts. However, we also find a general preference for lower profit inequality among the different actors, suggesting a need for business models that promote equitable profit distribution. This could involve setting fair prices, ensuring transparent cost structures, and implementing equitable payment terms. Profit-sharing mechanisms, such as cooperatives, joint ventures, or other forms of collaborative business models, could also be beneficial. Interestingly, the deliberation process appears to shift these preferences in various ways. In some cases, deliberation leads to preferences for lower total profit margin, reduced levels of fairness, and lower profit. In other cases, it results in preferences for higher margin and lower profit. This suggests that the assumptions about actor preferences in theory might not hold in practice once business models are applied in real market settings. Therefore, it is crucial to design business models that are flexible and can adapt to changing preferences and market dynamics. Regular communication and consultation with stakeholders, market research, and the implementation of commitment devices can help ensure that business models remain aligned with stakeholder preferences and market realities.

Emphasis text

Choice Experiment, Stakeholder preferences, Deliberation, Social Preferences, Fairness, Profit Inequality.

1 INTRODUCTION

The dynamics of the food supply chain are complex and multifaceted, shaped by a myriad of stakeholders, each with their unique preferences and priorities. These stakeholders, ranging from farmers and wholesalers to retailers, consumers, and industry actors, do not form their perceptions and preferences in isolation. Instead, their views are often shaped through interactions with peers, experts, and other actors within the supply chain. Understanding these dynamics is crucial for the development of effective and equitable business models. These dynamics have been traditionally analysed from an economic perspective. However, the rise of behavioural economics has brought to light the importance of social preferences in determining the actions of agents within the supply chain. These preferences, which extend beyond pure economic motivations, incorporate considerations for the welfare of others, reciprocity, and a sense of fairness, adding a layer of complexity to decision-making within the supply chain.

Evidence from recent studies suggests that social preferences can have a profound impact on economic decision-making within supply chain transactions (Loch and Wu, 2008; Ho, Su and Wu, 2013). These studies have observed departures from the predictions of models based on self-interested profit maximization. They found that preferences rooted in relationships can encourage cooperation, improve individual performance, and enhance overall system efficiency. On the other hand, preferences based on status can lead to competitive behaviour, potentially diminishing both individual and system performance. As a result, the role of social preferences in the food supply chain seems to be of paramount importance, as they not only shape the behaviour of supply chain agents but can also significantly influence the performance of the supply chain. Therefore, they warrant careful consideration in both supply chain research and practice.

Deliverable 4.2 is part of the LAB4SUPPLY project, which aims to provide practical solutions to Mediterranean smallholder farmers and other stakeholders within the agri-food supply chain facing economic challenges and pressures in selling and marketing their products. The project seeks to offer innovative and

viable solutions to enhance competitiveness, profitability, and the optimization of Agri-food supply chains, as well as improve the adaptation of smallholders' capacity to unexpected market changes. The overarching goal is to empower agri-food stakeholders in the Mediterranean area by identifying competitive and more efficient food supply chain alternatives that meet both farmers' and consumers' needs.

This report delves into the intricate process of preference formation within the food supply chain, focusing on the role of deliberation and preference elicitation methods. We argue that these methods, when used in conjunction, can improve the design of business models within the food supply chain by offering a deeper understanding of preference formation within the chain and provide insights that can guide future research and policymaking in this area. Our design employs a choice experiment involving different scenarios of price transmission, with attributes including producer prices, wholesaler prices, and retailer prices. Using the stakeholders' stated choices, we explore the importance of fairness considerations, within the food supply chain. By doing so, we aim to identify whether these are prevalent among stakeholders. The choices made by the stakeholder are observed both before and after a process of public, non-structured, and non-strategic deliberation, allowing us to assess the impact of deliberation on social preferences.

The remainder of the report is structured as follows. Section 2 presents the methodology and Section 3 presents the summary statistics of the survey data. Section 4 presents the results of the empirical application of the models and Conclusions and discussion follows.

2 METHODOLOGY

This section outlines the key methodologies employed in our research: the choice experiment and the deliberation process that were implemented in the context of the Agri-Food Living Labs. They were chosen for their potential to offer comprehensive and nuanced understanding of stakeholder preferences and the forces that mould these preferences within the food supply chain. These methods allow us to explore the intricate process of preference formation, generating invaluable data that can guide the creation of more efficient and fair business models within the food supply chain.

2.1 CHOICE EXPERIMENT

The main preference elicitation tool for understanding stakeholder preferences used in this task was an unlabelled Choice Experiment (CE) with each choice consisting of three alternatives. In CEs, individuals are given a hypothetical setting and are asked to choose their preferred alternative among several alternatives in a choice set. Usually, they are asked to perform a sequence of such choices with each alternative being described by several attributes or characteristics.

The choice experiment is designed to mimic the real-world decisions that stakeholders make within the food supply chain. By observing the choices that stakeholders make, we can infer their underlying preferences and understand how they value different attributes. In our case, stakeholders were presented with a series of choices, each representing a different scenario of price transmission. The attributes of these choices include producer price, wholesaler price, and retailer price while the production cost was considered fixed (the levels have been provided by the local partners based on expert knowledge). The levels used for each attribute are given in Table 1 below.

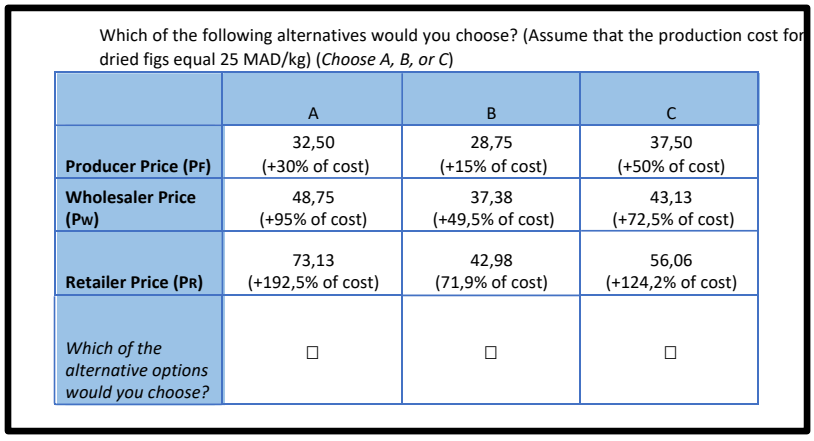
Given that each card consisted of 3 choices, alternatives had 3 attributes and each attribute had 3 levels, the size of the full factorial design has 19,683 (3^9) choice tasks. As a result, in our final survey we used a D-optimal design with 20 choices

in total. An example of a choice card used in the case study of dried figs in Morocco is given in Figure 1.

Table 1. Attributes and Levels of CE

Attributes	Levels	#
Production Cost [C]	Fixed. (Provided by local partners)	1
Farmer Price [P_F]	+ 5% of C + 15% of C + 35% of C	3
Wholesaler Price [P_W]	+ 5% of P_F + 15% of P_F + 35% of P_F	3
Retailer Price [P_R]	+ 5% of P_W + 15% of P_W + 35% of P_W	3

Thus, in making their choices, individuals implicitly make trade-offs between the levels of prices within the supply chain.



Which of the following alternatives would you choose? (Assume that the production cost for dried figs equal 25 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (PF)	32,50 (+30% of cost)	28,75 (+15% of cost)	37,50 (+50% of cost)
Wholesaler Price (Pw)	48,75 (+95% of cost)	37,38 (+49,5% of cost)	43,13 (+72,5% of cost)
Retailer Price (PR)	73,13 (+192,5% of cost)	42,98 (71,9% of cost)	56,06 (+124,2% of cost)
Which of the alternative options would you choose?	□	□	□

Figure 1. Choice Card Example (Dried Figs, Morocco)

These trade-offs are used to construct the measures of inequality and fairness that determine the choices, based on the concept of social preferences. In particular, we use several alternative such measures that are common in inequality and/or experimental/behavioural economics.

The first is the Difference Aversion (DA) index, similar to Fehr and Schmidt (1999) who suggested a utility function defined as $U_i = x_i - \alpha_i \frac{1}{n-1} \sum_{i \neq j} \max\{x_j - x_i, 0\} - \beta_i \frac{1}{n-1} \sum_{i \neq j} \max\{x_i - x_j, 0\}$, where α_i and β_i such that $\alpha_i \geq \beta_i$ and $0 \leq$

$\beta_i < 1$, and x_i represents the payoff of individual i. Our DA measure diverges from that of Fehr and Schmidt in two significant ways. Firstly, it considers fairness from a collective perspective, encompassing all intermediaries in the supply chain, rather than focusing solely on individual actors. Secondly, the Fehr and Schmidt model encapsulates both envy and altruism, as everyone compares their own payoff with every other individual in the reference group. However, for a given set of prices, our model operates within a zero-sum game framework. This means that any profit shortfall for one actor directly translates into excess profit for another. Consequently, our model does not accommodate a measure that distinguishes between collective envy and altruism but of difference aversion in general. DA represents the total average lack of profits of each stakeholder within the value chain.[1] It is constructed by adding the average profit each intermediary (farmers, wholesalers and retailers) lacks when compared with the rest of the actors, so it is defined as:

$$DA = \sum_{k=\mathrm{F},W,R} \sum_{Profit_l \geq Profit_k} \frac{(Profit_l - Profit_k)}{2}$$

The DA index is closely related to another alternative index we explore, which is the well-known Gini inequality coefficient (Gini, 1921), calculated as half of the relative mean absolute difference. The Gini coefficient can be formally defined as:

$$Gini = \frac{2\sum_{i=1}^{n} i\, profit_i}{n\sum_{i=1}^{n} profit_i} - \frac{n+1}{n}$$

Where i is the relative ranking of $profit_i$ among the profits of all actors. The relation to DA comes form the fact that the Gini Index is the mean value across individuals of an individual index G_i, given by (Davies, 2017):

[1] Taking the total average excess profit of each stakeholder (farmers, wholesalers and retailers) within the value chain is numerically equivalent.

$$G_i = \frac{1}{2n\bar{x}} \sum_{j=1}^{n} \left| Profit_i - Profit_j \right|$$

$$= \frac{1}{2n\bar{x}} \left[n_i^l \left(Profit_i - \overline{Profit}_i^l \right) + n_i^h \left(\overline{Profit}_i^h - Profit_i \right) \right]$$

with n_i^l is the number of individuals with profit less than or equal to $Profit_i$, excluding individual i, and n_i^h is the number with profit strictly greater than $Profit_i$, so that $n_i^l + n_i^h = n - 1$. $\overline{Profit}_i^l$ and $\overline{Profit}_i^h$ are mean profits among those with profit less than or equal to $Profit_i$, excluding i, and strictly greater than $Profit_i$ respectively.

A different aspect of inequality is that illustrated by Bolton-Ockenfels (2000) measure (BO) who suggested a general motivation function $V_i = (w_i, s_i)$ with w_i being the individual's own payoff and s_i being individual's share of the total payoff. They argued that it is increasing in w_i and decreasing in the difference of s_i from the social reference share $1/n$. BO represents the total deviation of each actor's profit from the 'egalitarian' solution (total market profit divided by the number of actors, which is 3 in this case) and serves as another measure of fairness :

$$BO = \sum_{k=f,\, w,\, r} \left| Profit_k - \frac{P_r - Cost}{3} \right|$$

The BO index above is not grounded on any measures of dispersion. As a result, we also consider the Pietra index, an alternative which, similar to the Gini coefficient, is based on the Lorenz Curve. The Pietra index (Pietra, 1915) is a measure of inequality calculated as the maximum vertical distance between the Lorenz curve of a distribution and the 45-degree line. It is expressed as the mean relative absolute deviation to the mean and is interpreted as the proportion of total profit that would have to be redistributed to achieve complete equality of the profit distribution, i.e., when all actors have the same profit.

$$Pietra = \frac{\sum_{i=1}^{n} \left| Profit_i - \overline{Profit} \right|}{2n\overline{Profit}}$$

Similarly, the Atkinson (1970) approach is based on social welfare notions and is designed to capture the extent to which a distribution deviates from an equal distribution. The Atkinson index is a measure of inequality that incorporates a parameter to reflect inequality aversion. Since inequality aversion is meant to be captured in our models by the corresponding parameter estimates, we normalise the parameter to 0.5, so the formula for the index is:

$$Atkinson = 1 - \left(\frac{1}{n} \sum_{i=1}^{n} \left(\frac{Profit_i}{\overline{Profit}} \right)^{1/2} \right)^2$$

Finally, we also use two candidate measures form the family of Generalised Entropy (GE) measures. These measures constitute a powerful tool in the inequality research, as they allow for the identification of the sources of inequality within and between different subgroups of the population, while also ensuring that the measure of inequality is robust to changes in the size of the population, the scale of measurement, and the transfer of money between individuals, households or firms (Cowell, 2000). GE measures depend on a parameter α that expresses the sensitivity of the indicator to different parts of the distribution:

$$GE(\alpha) = \begin{cases} \frac{1}{\alpha(\alpha-1)} \frac{1}{n} \sum_{i=1}^{N} \left[\left(\frac{Profit_i}{\overline{Profit}} \right)^{\alpha} - 1 \right], & \alpha \neq 0,1 \\ \frac{1}{n} \sum_{i=1}^{n} \frac{Profit_i}{\overline{Profit}} \ln \frac{Profit_i}{\overline{Profit}}, & \alpha = 1 \\ -\frac{1}{n} \sum_{i=1}^{n} \ln \frac{Profit_i}{\overline{Profit}}, & \alpha = 0 \end{cases}$$

We consider the two most widely used GE indexes. The first is the Theil-L measure (Theil, 1979), which corresponds to the special case of $\alpha = 0$ and the other is the special case of $\alpha = 2$, which is equal to half the squared coefficient of variation.

The measures we have discussed so far primarily capture the inequality between the profits of farmers, wholesalers, and retailers, and are thus substitutes to each other.

However, there's another measure of fairness that can be considered separately from these. This measure primarily concerns consumers, but it also impacts all other actors in the supply chain through demand. This is the total profit margin in the supply chain, which is calculated as the difference between the retail price of the product and the cost of production:

$$Margin = P_r - Cost$$

As a result, the first step of the analysis involves calculating the nominal profit for all actors involved in the supply chain for each alternative. This includes farmers, wholesalers, and retailers. The profit for each actor is determined by subtracting their buying price from the price they receive for the product. For instance, the profit for farmers is calculated by subtracting the cost of production from the price farmers receive for their product. Similarly, the profit for wholesalers is calculated by subtracting the price they pay to farmers from the price they receive from retailers. The profit for retailers is then calculated by subtracting the price they pay to wholesalers from the price they receive from consumers. In addition to these individual profits, an egalitarian profit is also calculated. This is the total profit in the market divided by the number of actors, which in this case is three. The egalitarian profit represents an equal distribution of profits among all actors in the supply chain. Once these profits are calculated, all inequality measures are computed for each alternative in the choice experiment, based on what is presented above.

Given that half of the choice experiment choices tasks are made before the deliberation process (discussed momentarily) and half are made after, the design allows us to assess the impact of deliberation on stakeholders' social preferences, as captured by these measures.

2.2 DELIBERATION PROCESS

The deliberation process involved a public, non-structured, and non-strategic discussion among stakeholders. During the deliberation, stakeholders are asked to prioritize the features that are most important to them in terms of operating within

their supply chain. They select the four most important features and sort them from most to least important. Each group of stakeholders had a unique set of features to select from, reflecting the distinct roles and concerns within the food supply chain. These features were carefully selected to reflect the realities and concerns of each stakeholder group, providing a robust basis for understanding their preferences and decision-making processes.

For farmers, the features encompassed a range of factors affecting agricultural production and market dynamics. These included investments in technology and innovation, input prices, behaviour of trading partners, farmers' associations, cultural practices, and negotiation with retailers. Wholesalers, on the other hand, had features related to their intermediary role in the supply chain. These included fair trade conditions, overhead expenses, unforeseen expenses, number of persons employed, local suppliers, behaviour of the trading partner, and pricing plans. Retailers were presented with features that reflected their interface with both producers and consumers. These included small-scale producers, large-scale producers, product characteristics, loyalty to supplier, pricing strategy of the supplier, communication with customers/wholesalers, and payment terms. Consumers, the end-users of the supply chain, had features that reflected their purchasing decisions and values. These included fair trade, price, chain production process, product quality, sustainable certifications, certifications of third parties, and direct purchases by small family farms. Finally, industry stakeholders, who use the product as an input in their own production processes, had features that reflected their sourcing decisions and market dynamics. These included indication of origin, purchased in bulk, price, demand by clients, communication channels, information on prices, and loyalty to suppliers.

Once all participants made their selections, they read aloud their top choices. This was followed by a 20-minute dialogue among the participants, facilitated by a visible table of the top features chosen by each participant. The deliberation process was designed to simulate the discussions and negotiations that occur within the food supply chain. It provided a platform for stakeholders to share their perspectives, learn from others, and potentially adjust their preferences in light of new

information or viewpoints and it has the potential to significantly influence social preferences. For example, Walton (2013) found that deliberative discussion can encourage prosocial preferences by increasing the majority of participants' concern for rights of future generations and other species to inherit a pristine wilderness area, although they argue that participants' pre-existing environmental bias can make it difficult to separate the social influence of deliberation from majority influence. In addition, Grönlund et al. (2010) suggest that, at least to a limited extent, deliberation can enhance civic virtues such as political knowledge, efficacy, trust, and preparedness for political and other collective action. Finally, Caluwaerts and Reuchamps (2014) found that, if certain conditions are met, deliberation can foster intergroup appreciation. That shows that deliberation may encourage stakeholders to consider the viewpoints and interests of others, fostering empathy and a greater appreciation for collective interests, which can lead to more socially oriented preferences.

This effect of deliberation may be attributed to a variety of interconnected factors, such as exposing individuals to new information, perspectives, and social norms, and encouraging reflection and critical thinking. During the deliberation process, stakeholders engage in information sharing, presenting perspectives and insights that others may not have previously considered or been aware of. These new perspectives and insights can prompt individuals to reassess their own self- or other-regarding preferences. Barabas (2004) found that deliberation can increase knowledge and alter opinions, at least selectively, based on the quality and diversity of the messages as well as the willingness of participants to keep an open mind while Fraile (2014) also found that it can increase political knowledge, especially among women, suggesting that it can contribute to reducing the gender gap in knowledge. The normative influence of deliberation also plays a role, as discussions about what is fair, just, or beneficial for the group or society may shape social norms and expectations, nudging individuals to adopt more socially conscious preferences. In fact, Kaplan (1984) argues than the normative influence is likely to prevail over the informational influence in cases of public judgments, under group cohesion sets, and with value-laden issues. Deliberation's normative influence is also supported by Pelletier et al. (1999) who found that it can cause

some participants to alter their viewpoints in ways that appear contrary to their values and interests as expressed prior to the deliberative event. Group dynamics, including the relationships between participants (e.g., groups or parties) and the balance of power, can also sway how individuals form their original preferences. For instance, individuals may align their preferences with those of respected or influential groups and/or group members. Cohen (2003) demonstrated that attitudes toward a social policy depended almost exclusively upon the stated position of one's political party. Such group dynamics have been also suggested by McGarty et al. (1994) who found that influence within groups is not due to peripheral cues but rather to self-categorization, while Myers (2017) shows that arguments made by members of the minority are less influential than those made by members of the majority. Lastly, the process of deliberation encourages individuals to reflect on their own preferences and the reasons behind them. Reflecting on the reasons behind one's perspectives has been shown to alter individuals' attitudes towards a wide range of subjects, suggesting that this reflection and critical thinking may also lead to changes in social preferences. These can include their views on other individuals (e.g. Johnson, MacArthur & Wright, 1991), their preferences for beverages (e.g. Wilson & Dunn, 1986) and their approach to puzzles (e.g Wilson, Bybee, Dunn, Hyman, & Rotondo, 1984).

In conclusion, the significance of deliberation outcomes in understanding real market dynamics cannot be overstated, as the shaping of opinions and attitudes in actual market scenarios is a product of ongoing interactions and deliberations among various market participants. This 'fermentation' of opinions, as it were, is instrumental in determining market behaviors and outcomes and ensures that we capture the intricacies of real-world markets, thereby enhancing the robustness and applicability of our findings. A lack of understanding of the pressures created within the supply chain might be the reason that carefully designed business models fail once they are introduced into the market.

2.3 ECONOMETRIC MODEL

The econometric estimation is based on a random utility framework that assumes utility functions with a linear-in-attributes deterministic component V and a random idiosyncratic component ε reflecting the unobserved influences. The cost is not part of the design, so they remain constant within the choice set. The surpluses for the industry and consumers are unobserved and vary only with P_w and P_r, respectively, as consumer's willingness to pay (WTP), and industry prices for the product are constant within all choice sets.

As a result, the utility from the j^{th} alternative of respondent n in choice situation s is given by:

$$U_{nsj} = V_{nsj} + \varepsilon_{nsj}, with\, V_i = f(Profit_{ins}, Margin_s, Ineq_s)$$

where $Profit_{ins}$ is the profit actor i (Producers, Wholesalers, Retailers) will get from the transaction in the market described by the scenario. For consumers and industry, since consumer and industry surpluses are unobserved, it takes the value of negative P_r and P_w, respectively. Finally, $Margin_s$ and $Ineq_s$ are the measures for capturing social preferences as defined above. $Margin_s$ is the total profit margin in scenario s and $Ineq_s$ is the inequality in intermediaries' profits as captured by one of the relevant indexes presented in subsection 2.1. Given that, as described above, we consider seven alternatives measures of inequality (Atkinson, BO, DA, Gini, Theil, Coefficient of Variation and Pietra), we ran seven models for each product. To capture the effects of deliberation, we include 3 extra terms in the utility function that correspond to the interaction of each element (own profit, inequality measure and profit margin) with a dummy indicating whether choices were made before or after the deliberation process.

The parameters β_{nk} in our model denote the marginal utility or weight associated with measure k, and we consider them as generic. Given the nature of our unlabelled choice experiment design, it is not plausible to assume that one or more parameters might be specific to certain alternatives. Therefore, we assume these

parameters to be constant (generic) across all alternatives. The utility function U represents the preferences of the decision makers, and we assume that each decision maker acts to maximize this utility. Given these assumptions, we can estimate the unknown parameters of the utility model from the observed choice outcomes between different alternatives using the Multinomial Logit model (MNL), as described by Train (2009). The probability that individual n chooses alternative j (denoted as j_n) from a choice set containing alternatives $j = 1, \dots, J$ is given by:

$$\Pr(\mathrm{j_n}|J_\mathrm{n}, \boldsymbol{X}_{nj}) = \frac{\mathrm{e}^{V_{nsj}}}{\sum_{j=1}^{\mathrm{J}} \mathrm{e}^{V_{nsj}}}$$

The model described above allows for the maximization of the log-likelihood function to have a closed form solution. However, MNL, while theoretically straightforward, has significant limitations. These include the Independence of Irrelevant Alternatives (IIA) assumption, the lack of heterogeneity in individuals' preferences, and the disregard for the panel nature of the data (i.e., choices are considered independent even when made by the same agent).

To circumvent these restrictive assumptions and account for heterogeneity among respondents' preferences, we also estimate an extension of the MNL, specifically the Random Parameters Logit (RPL) model. This model relaxes the assumption of constant β parameters and instead assumes that they are randomly distributed among respondents. Unlike the MNL, the RPL model does not have a closed-form solution, necessitating the use of simulated maximum likelihood for parameter estimation (Train, 2009). The distribution of β's used was the normal distribution for the restrictions that could have a positive or negative marginal utility (i.e., the total profit margin, all inequality measures), so that :

$$\beta_i = \mu_i + \sigma_i v_i \,,\; i = Margin, Ineq \,;\; v_i \sim N[0,1]$$

In the case of own profit, where the coefficient should be restricted to positive values, we employ the skewed normal distribution, as:

$$\beta_{profit} = \mu_{profit} + \sigma_{profit} v_{profit} + \lambda_{profit} \left| w_{profit} \right| , w_i \sim N[0,1]$$

The effect of deliberation in the RPL is captured by the heterogeneity in the means of the random parameters, i.e. assuming that the μ_is in the above setting can be decomposed as $\mu_i + \mu_i{:}\, Deliberation$, with first part reflecting the estimated mean of the random parameter before the deliberation process and the second part capturing the shift in preferences after the deliberation process. For each model we use 1000 simulations based on the Modified Latin Hypercube Sampling (MLHS) method for all parameters (Hess, 2006).

3 DATA

For the empirical application of the model presented in Section 2, we relied on the survey data collected under the Agri-Food Living Labs. The Agri-Food Living Lab is a community of practitioners that provides a conducive environment for achieving the objectives of the LAB4SUPPLY project. Living labs are collaborative spaces where stakeholders come together to identify barriers, explore opportunities, and co-develop innovative solutions.

We employed a meticulously designed questionnaire to gather data on socio-economic variables, the distribution channels utilized by farmers, and preferences regarding price transmission mechanisms. The development of this questionnaire adhered to established scientific procedures to ensure its validity and consistency and in particular: (a) Defining the content of the questionnaire based on the data requirements of Task 4.2, informed by a preliminary review of the relevant literature; (b) Carefully crafting and phrasing the questions, incorporating a variety of question types such as closed- and open-ended questions, multiple-choice questions, dichotomous questions, and demographic questions; (c) Implementing a proper coding system for all question items and (d) Thoroughly testing the questionnaire to identify any potential issues. The six survey instruments used for this deliverable can be found in the Appendix.

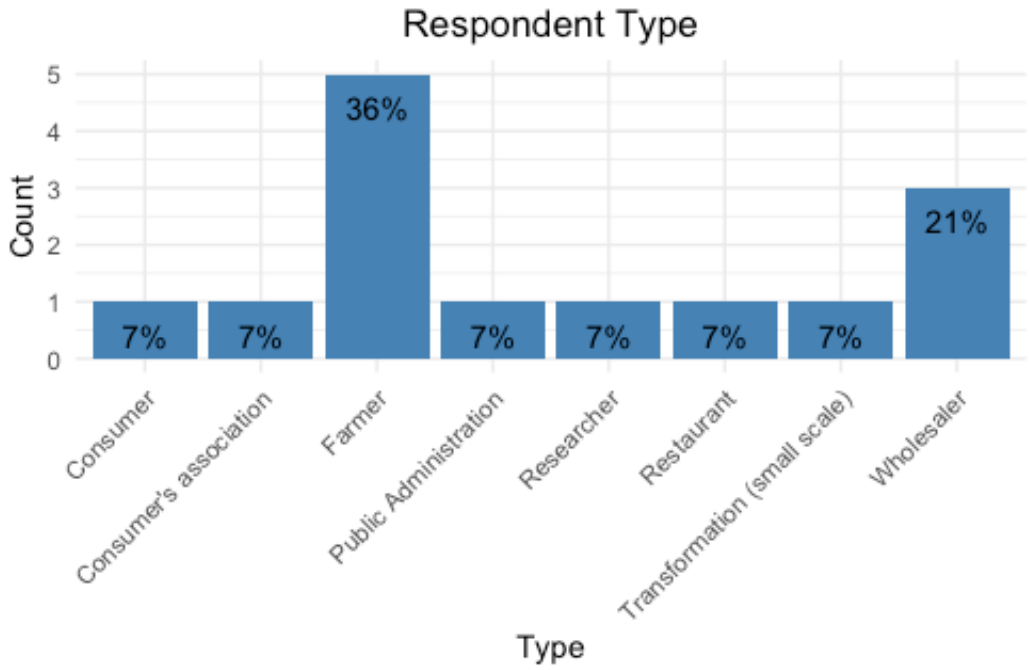
Following the development and testing phases, the questionnaire was shared with the local partners for translation. We also held bilateral meetings with all local partners who conducted the living labs, providing an opportunity for interviewers to clarify any doubts and ask questions about the process. In addition to the questionnaire, AUA supplied local partners with an Excel template to record the responses. After the responses were logged, the completed templates were returned to AUA for further analysis.

Overall, the sample consisted of 14 tomato stakeholders and 11 fig stakeholders from Spain, 17 carob stakeholders and 14 dried figs stakeholders from Morocco and 12 fig stakeholders and 10 chestnut stakeholders from France. With 20 choice

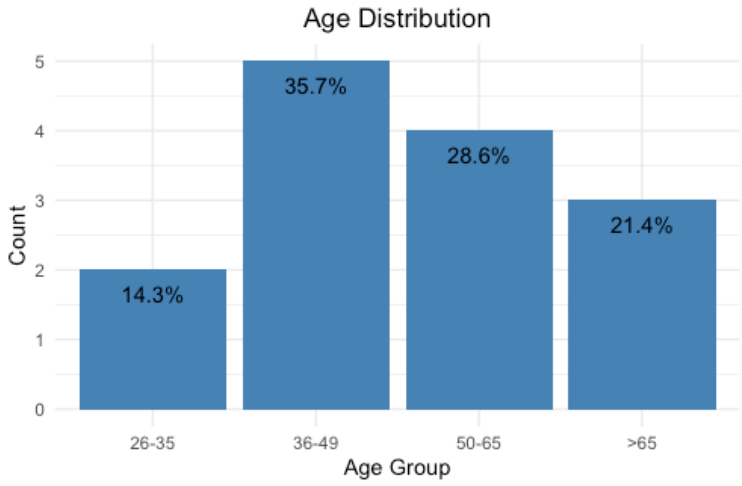
cards for each respondent, the above numbers translate to a total of 1560 choice data over all countries. Nevertheless, we had to exclude some observations from the analysis, since they had missing choices. The profile of respondents in each country and product is presented in detail below.

3.1 SPAIN - TOMATOES

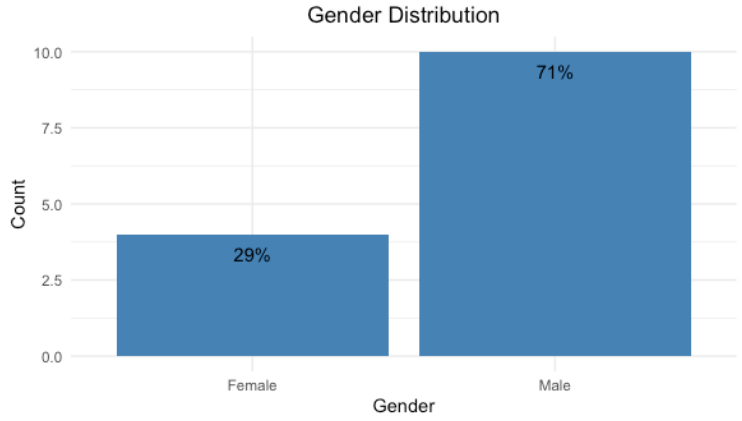
In this survey, 14 respondents participated. The largest group of respondents (36%) were Farmers, followed by Wholesalers (21%). Other roles including Consumer, Consumer's Association, Restaurant, Researcher, Public Administration, Former Wholesaler, and Transformation Industry (small scale), each accounted for 7% of the total respondents.



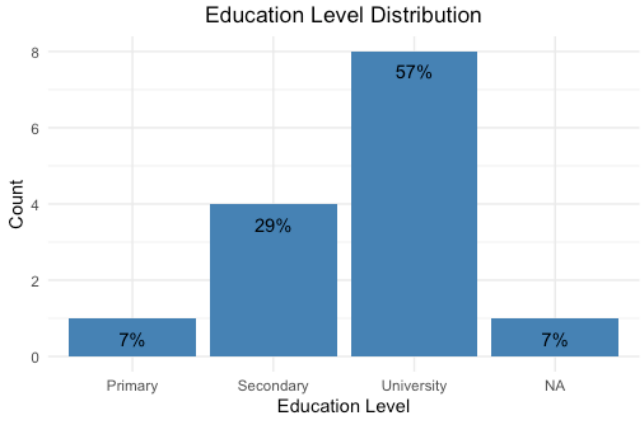
In terms of age, the majority of respondents (35.7%) fell into the 3rd category (36-49 years old), followed by those in the 4th category (50-65 years old) making up 28.6% of the total, the 5th category (more than 65 years old) at 21.5%, and the 2nd category (26-35 years old) at 14.3%.



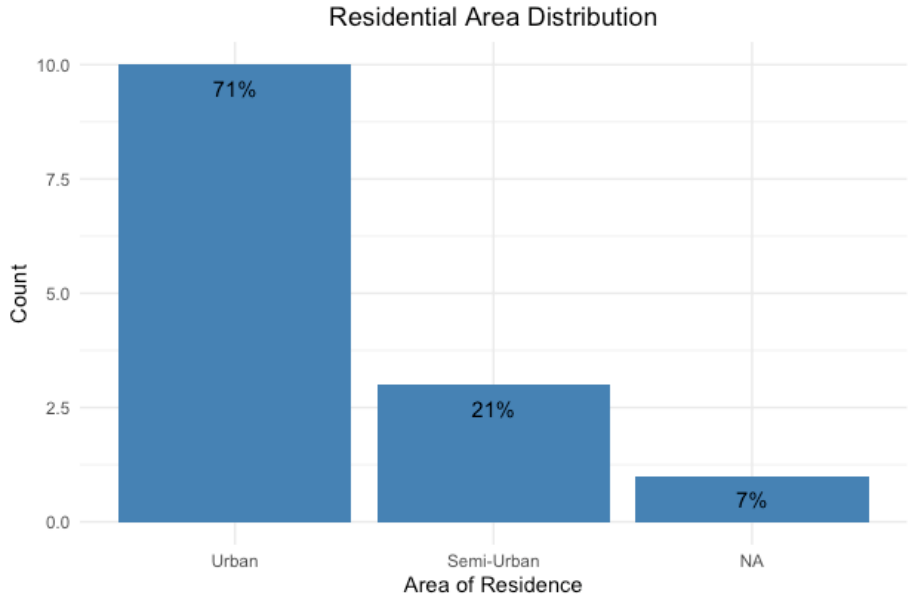
Regarding gender, the majority of respondents (71%) were male, with 29% being female.



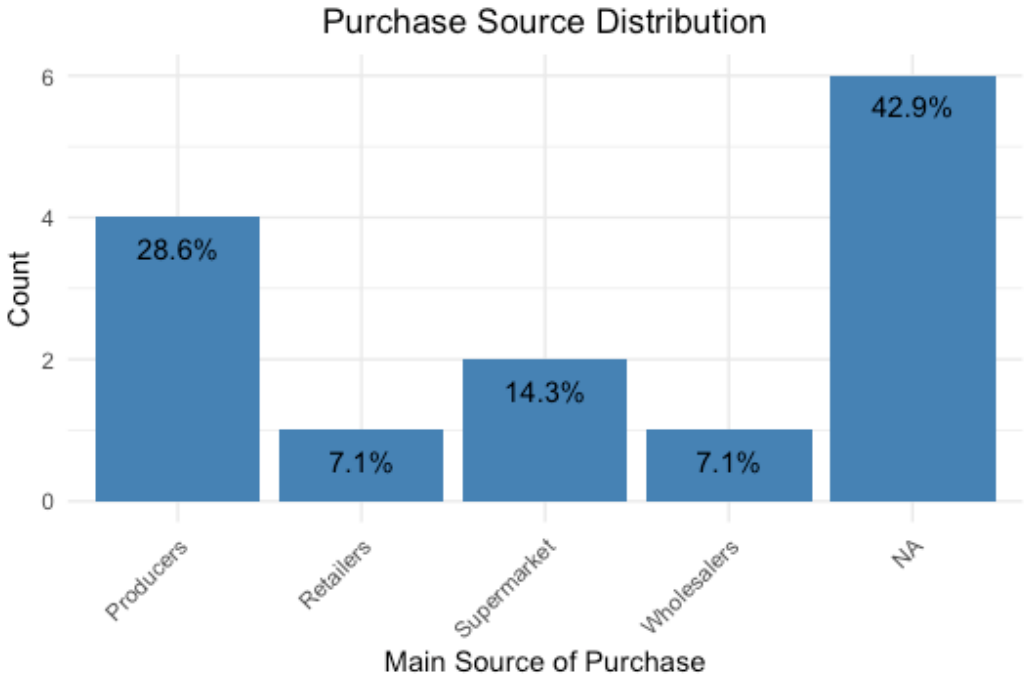
When it comes to education, 57% of the respondents had achieved university-level studies, 29% had completed secondary studies, and 7.1% had not completed primary studies. One respondent (7.1%) did not provide a response.



In terms of residence, 71% of respondents lived in rural areas, while 21% lived in urban areas. One respondent (7.1%) did not provide a response.

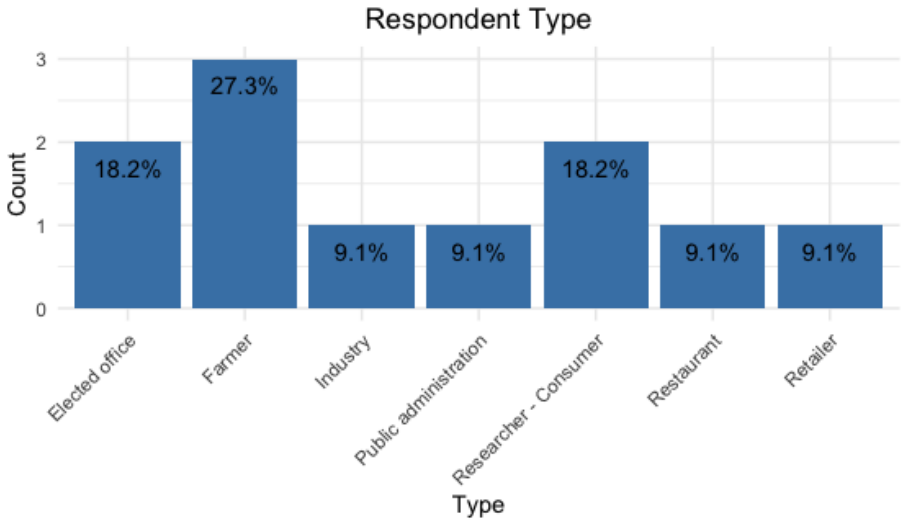


For the purchase of tomatoes, the sources were varied among those who responded. 28.6% of them bought from Producers, 14.3% from supermarkets and 7.1% from wholesalers, and from retailers.

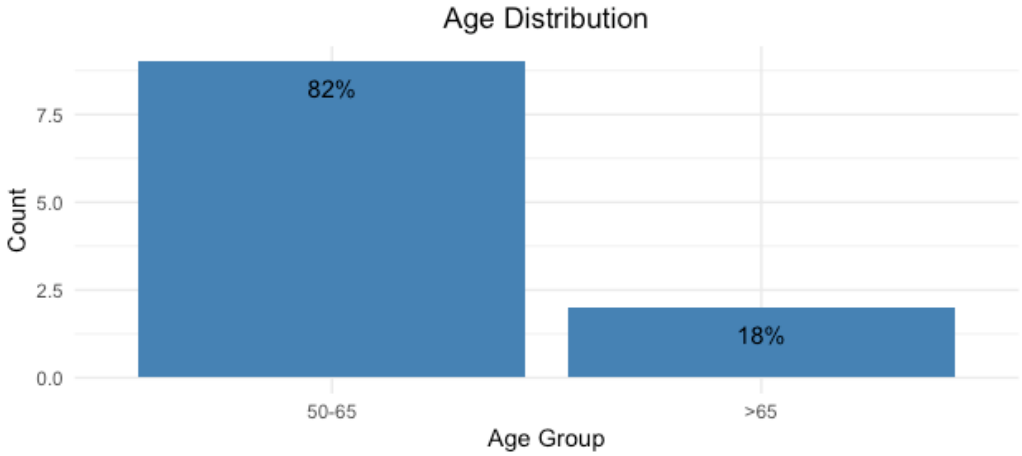


3.2 SPAIN - FIGS

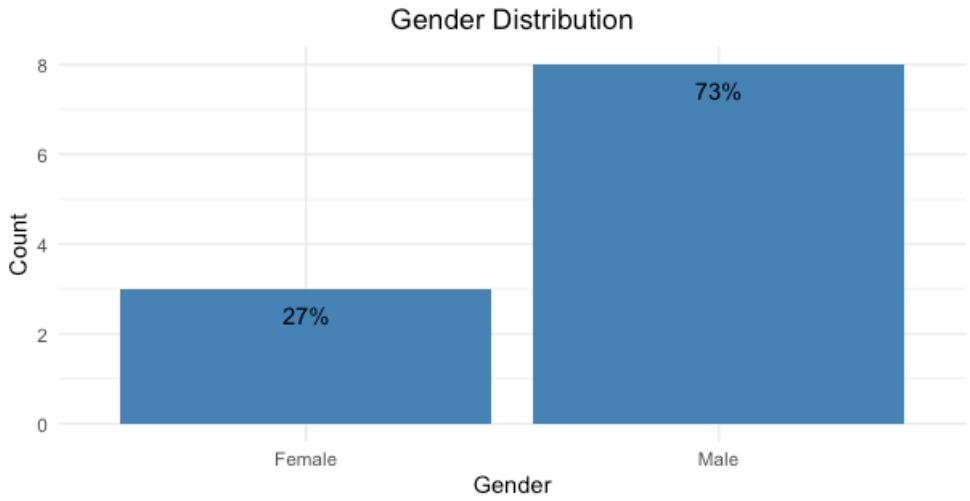
In this survey, 11 respondents participated. The largest group was that of farmers (27.3%), as well as researchers- consumers and those who held elected offices (18.2% each). There were also respondents who worked in public administration, as well as a baker and confectioner, a member of the association of restaurateurs, a supermarket representative, each making up 9.1% of the total.



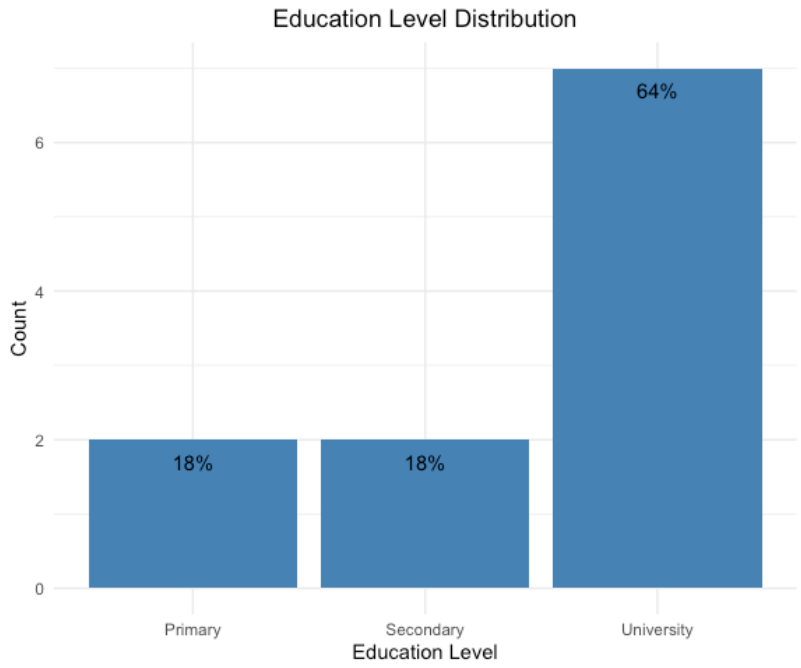
In terms of age, 81.8% of the respondents fell into the 4th category (50-65 years old), while 18.2% fell into the 5th category (more than 65 years old).



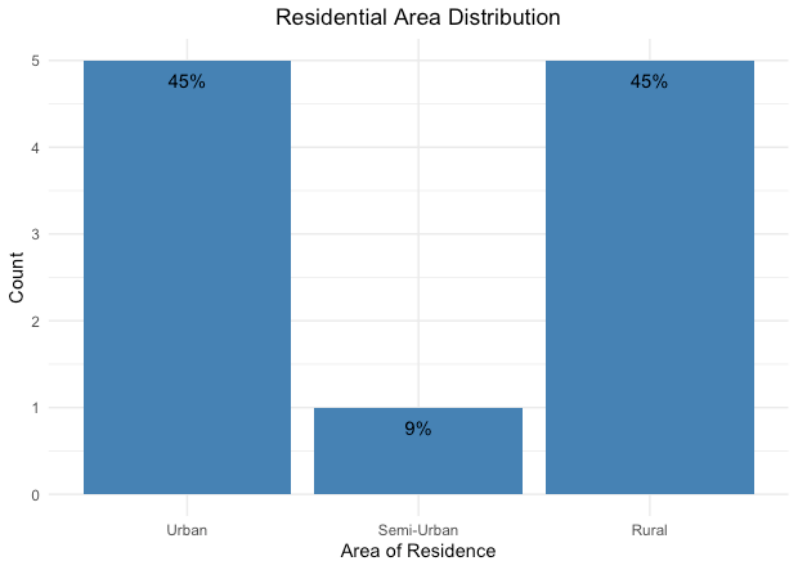
As for gender, the majority of the respondents (72.7%) were male, while the remaining 27.3% were female.



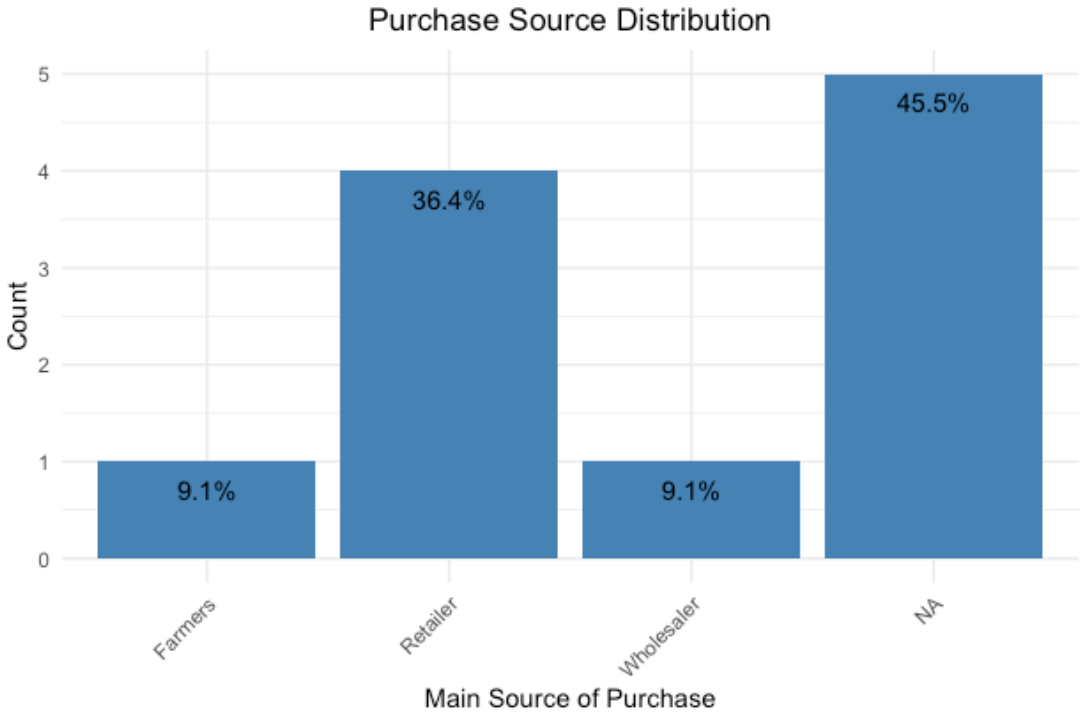
Concerning education, 64.5% of the respondents had achieved university-level studies, 18.2% had completed secondary studies, and 18.2% had not completed primary studies.



Almost all respondents lived in rural and urban areas (45% each), while the rest (9%) lived in urban areas.

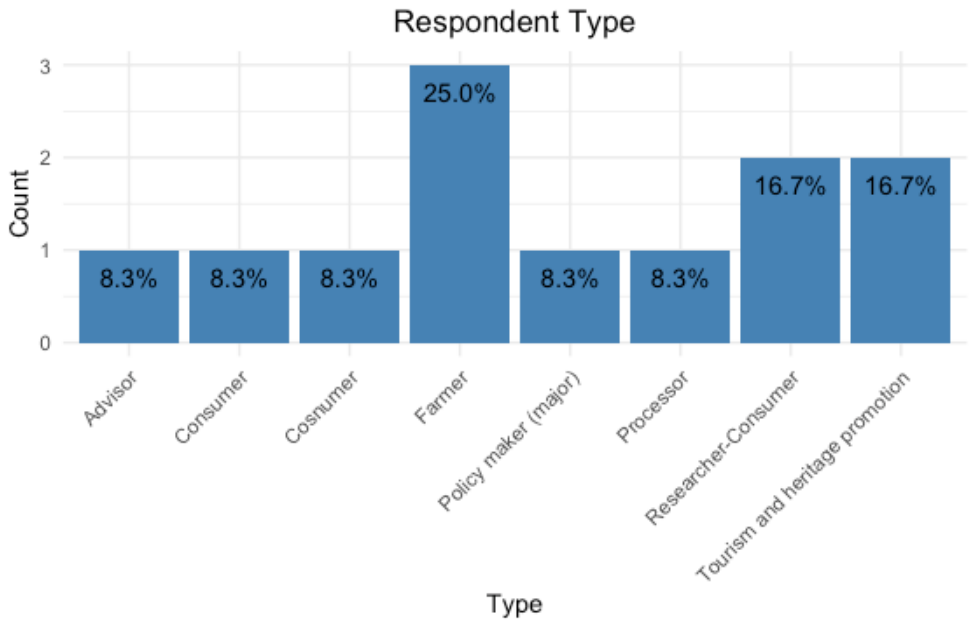


Regarding the purchase of figs, respondents had different preferences. 36.4% of them bought figs from retailers, and another 18% from farmers and wholesalers (distributors).

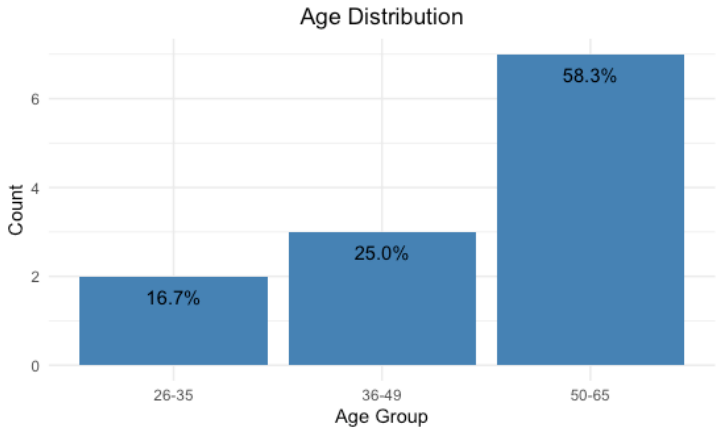


3.3 FRANCE – FIGS

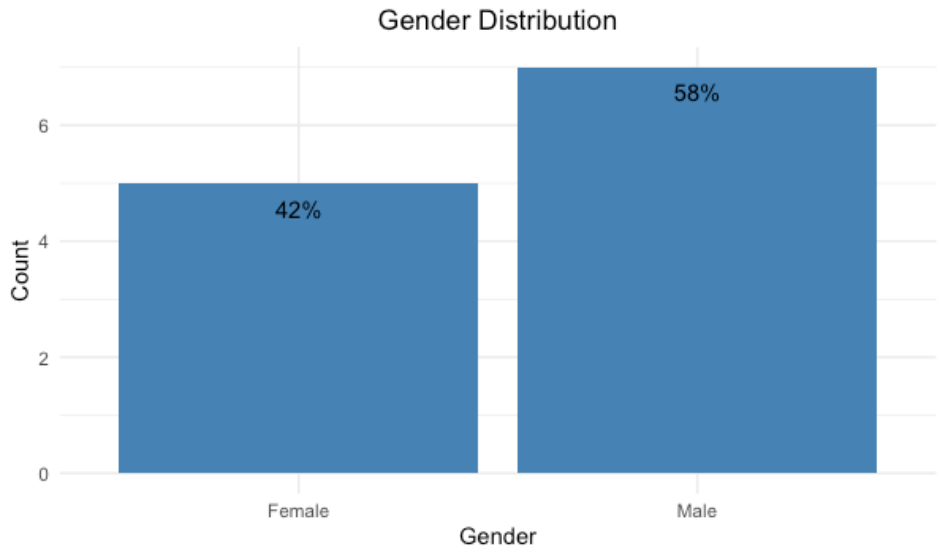
In the figs Living Labs of France, there were 12 respondents. The respondents' occupations were diverse, with most of them being Consumers and Farmers (see figure), Tourism and Heritage Promoters, Advisors, Processors, and major Policy Makers were also represented.



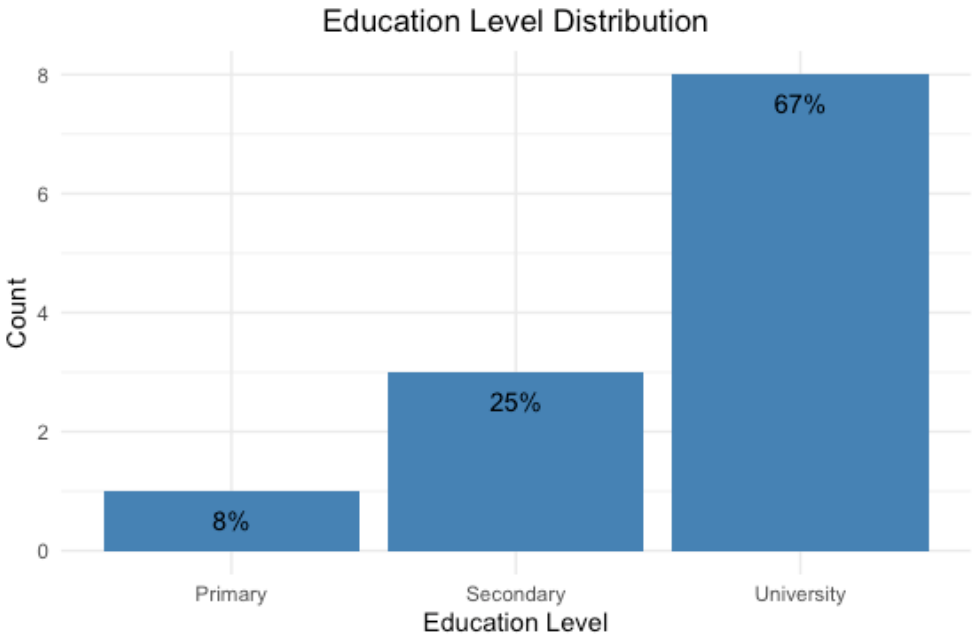
Regarding age, most respondents fell into the 4th category (50-65 years old), making up 58.3% of the total. 25% were in the 3rd category (36-49 years old), while 16.7% fell into the 2nd category (26-35 years old).



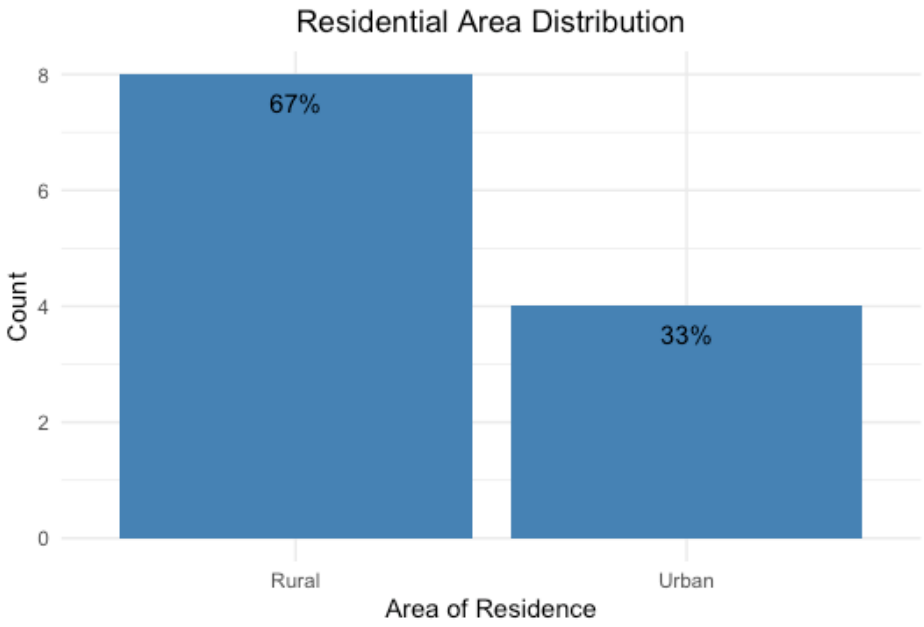
The gender distribution was more balanced in this survey, with 58% of respondents identifying as male and 42% as female.



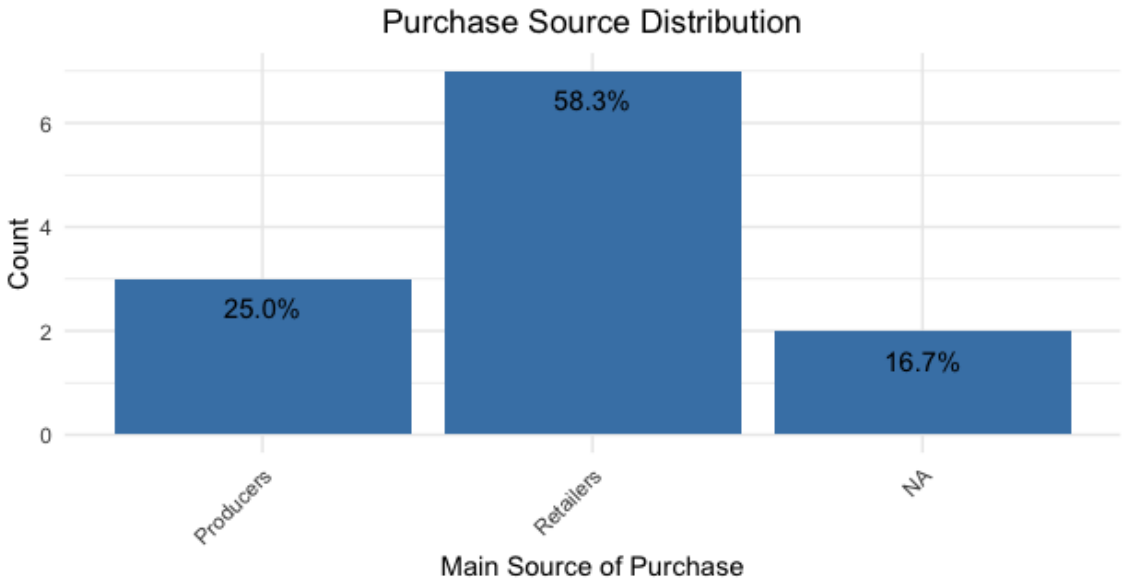
In terms of education, most respondents (66.7%) had completed University studies. A quarter (25%) completed secondary studies, and 8.3% had completed primary studies.



When it comes to the area of residence, the majority of respondents (75%) resided in rural areas, with the remaining 25% being urban dwellers.

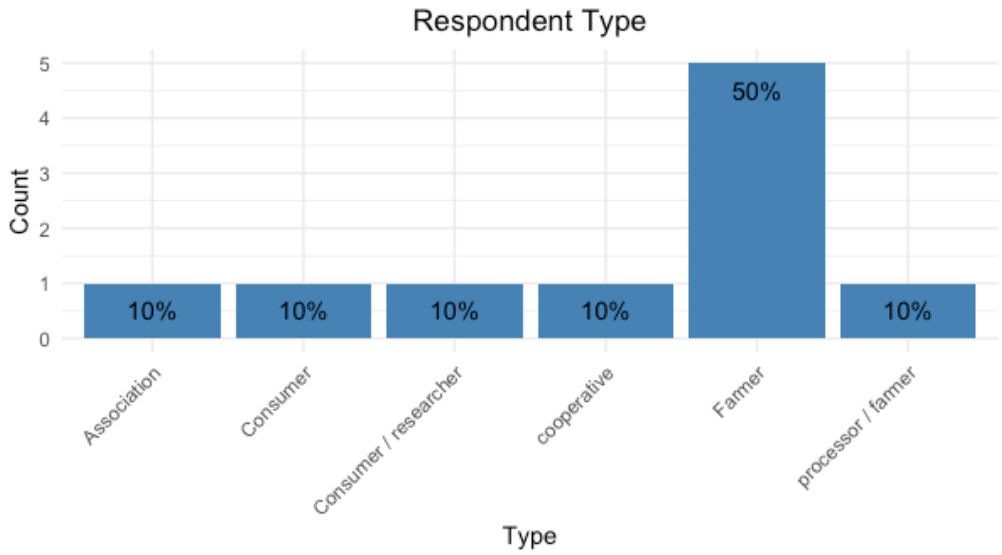


Finally, concerning the purchase of figs, a variety of sources were used. Some respondents bought from local markets or groceries (58.3%), others harvested from their own personal orchards (16.7%), and some bought directly from producers (25%). Not all respondents needed to buy figs: some were producers themselves (8.3%) or had direct access to fig trees in the wild (8.3%).

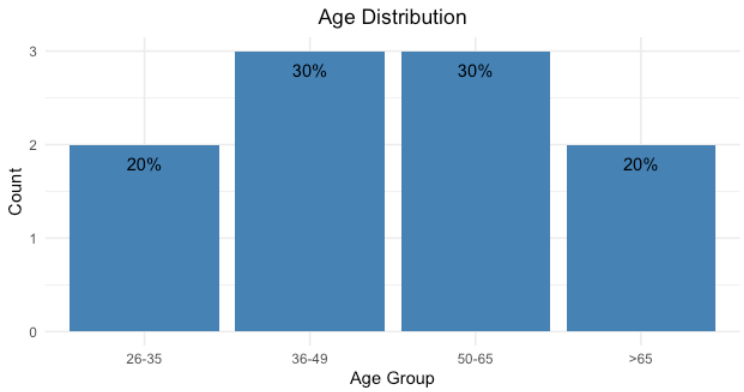


3.4 FRANCE – CHESTNUTS

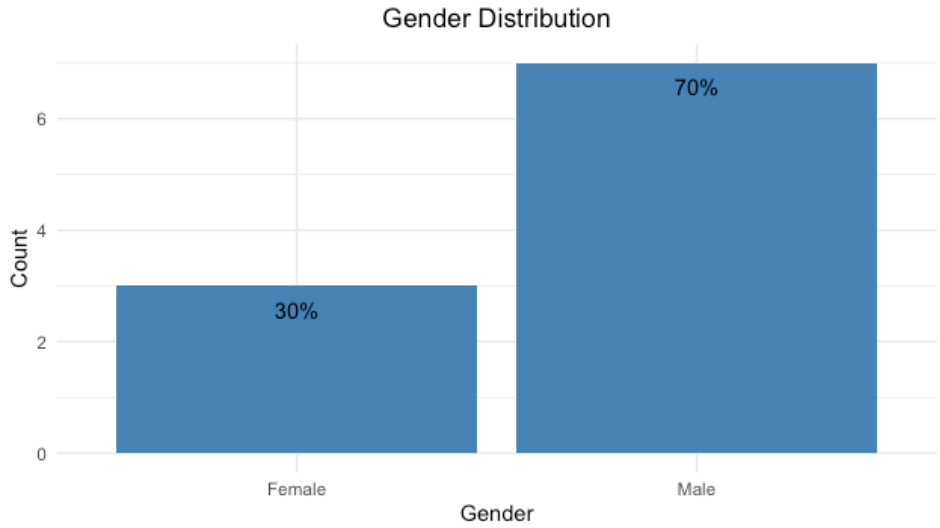
In this survey, 10 respondents participated. The majority of the respondents (50%) were Farmers, followed by Consumers (20%). There was also a representative each from a Cooperative, a Processor, and an Association, each making up 10% of the total.



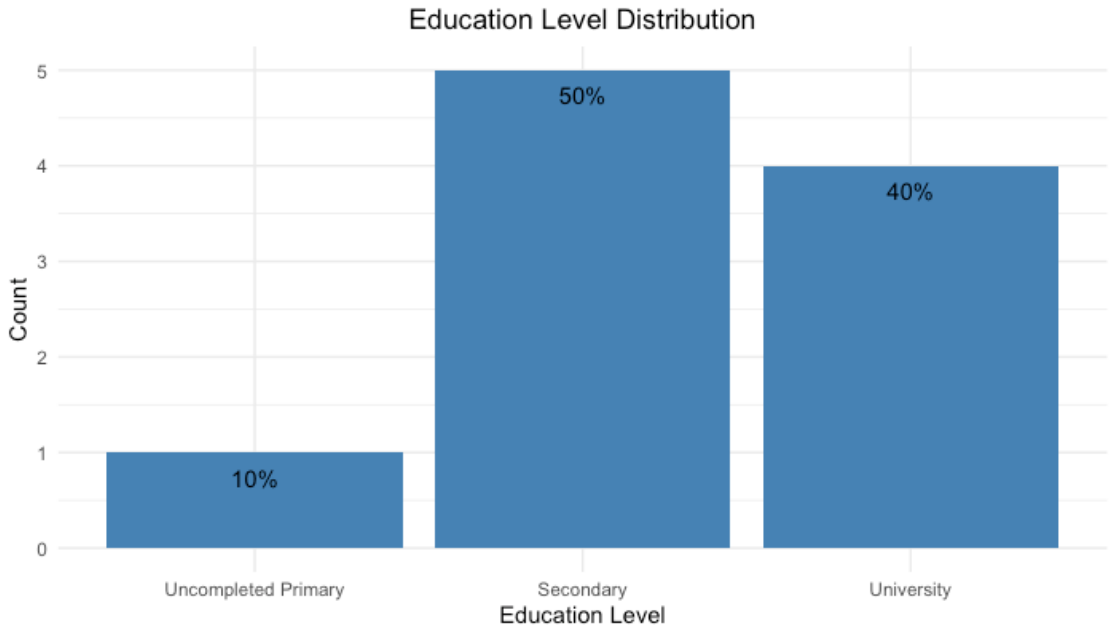
In terms of age, 30% of the respondents fell into the 4th category (50-65 years old), 30% were in the 3rd category (36-49 years old), 20% fell into the 5th (more than 65 years old) and the 2nd (26-35 years old) category.



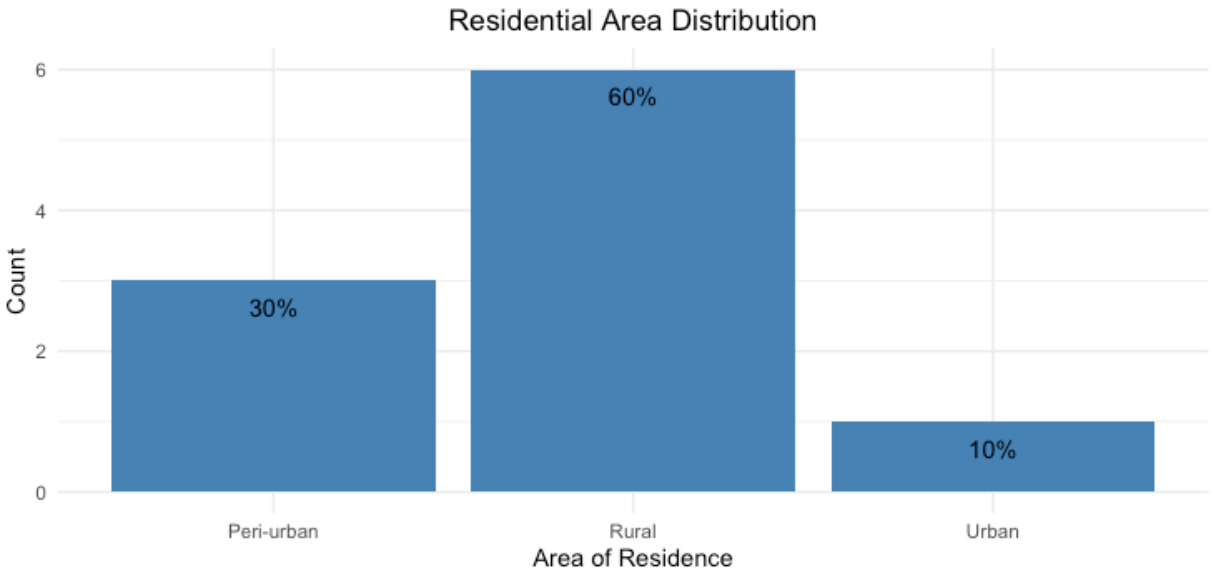
In regards to gender, 70% of the respondents were male, while the remaining 30% were female.



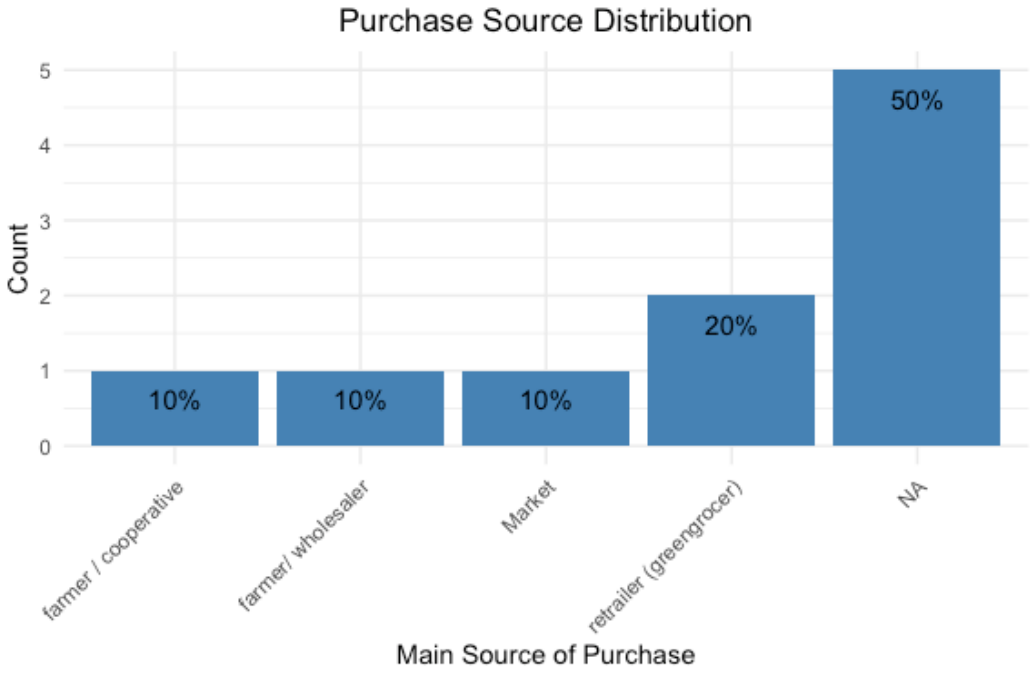
Concerning the level of education, half of the respondents (50%) had achieved university-level studies, while 40% had completed secondary studies. One respondent, representing 10% of the total, had not completed primary studies.



The majority of respondents (60%) lived in rural areas, while 30% lived in peri-urban areas and 10% in urban areas.



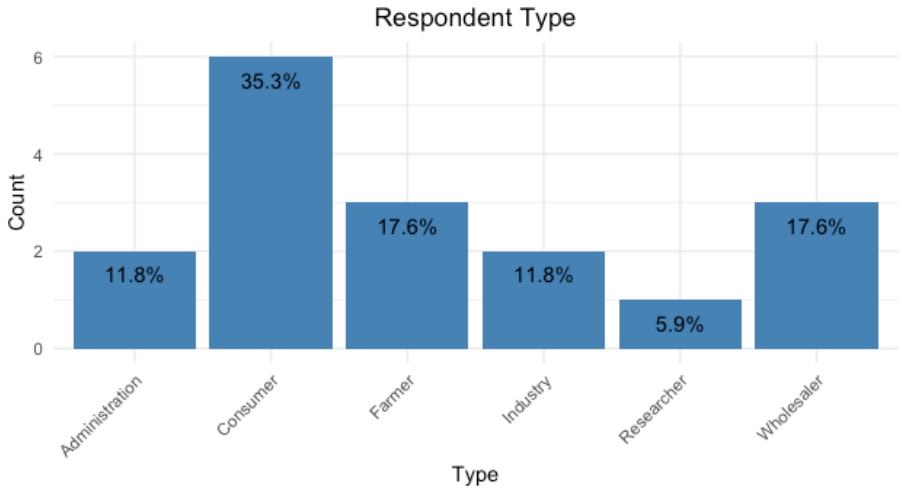
Among the five non-farmers, two buy their figs from farmers, one from a market, and one from a retailer or greengrocer.



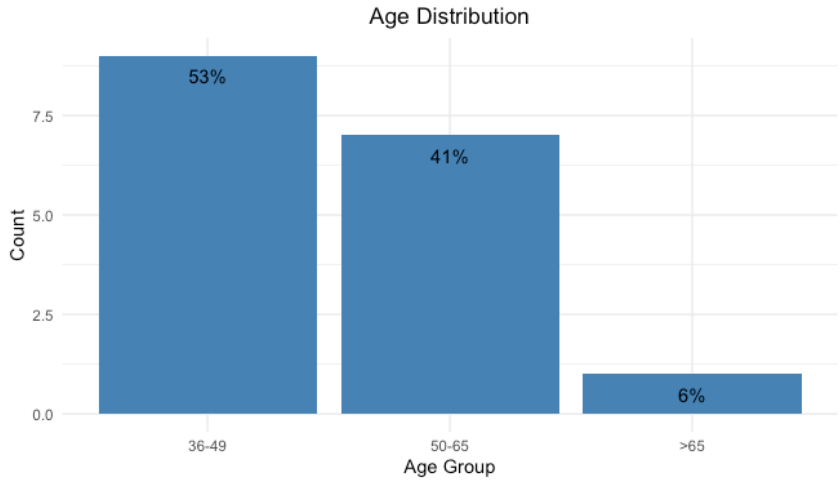
3.5 MOROCCO – CAROB

In the Carob Living Labs of Morocco, there were 17 participants. In terms of occupation, a substantial proportion of the participants (35.3%) identified as

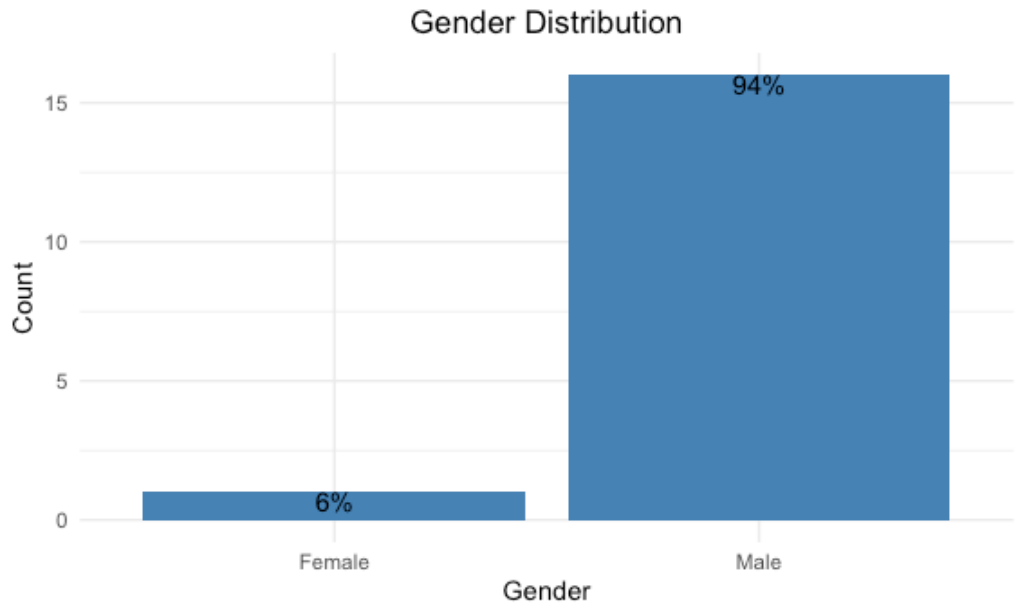
consumers. This was followed by wholesalers and farmers each making up 17.6% of the total respondents. Participants from the administration and industry sector also accounted for 12%. There were also representatives from the fields of consultancy, research, and industry.



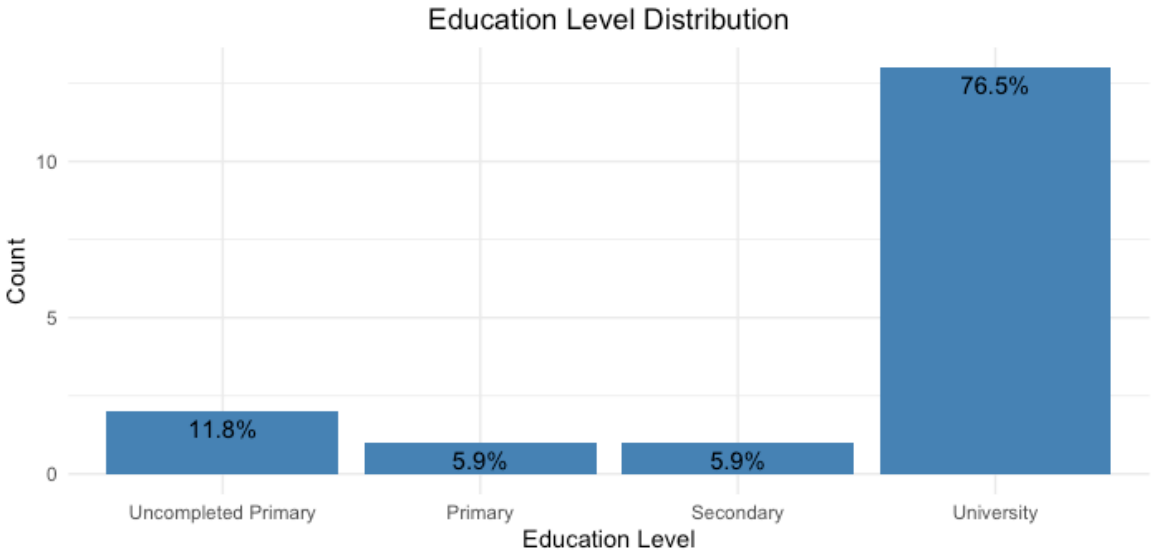
Regarding age, the majority of the respondents fell into the 36-49 years old and 50-65 years old brackets, making up 53% and 41% of the total respectively. The remaining 6% of respondents were more than 65 years old.



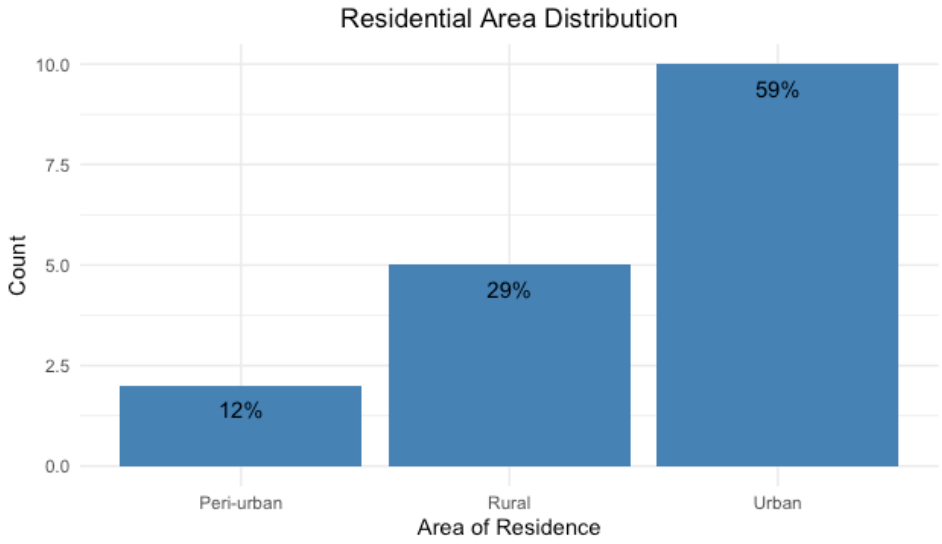
As for gender, nearly all respondents (94%) identified as male, with only one female respondent making up the remaining 6%.



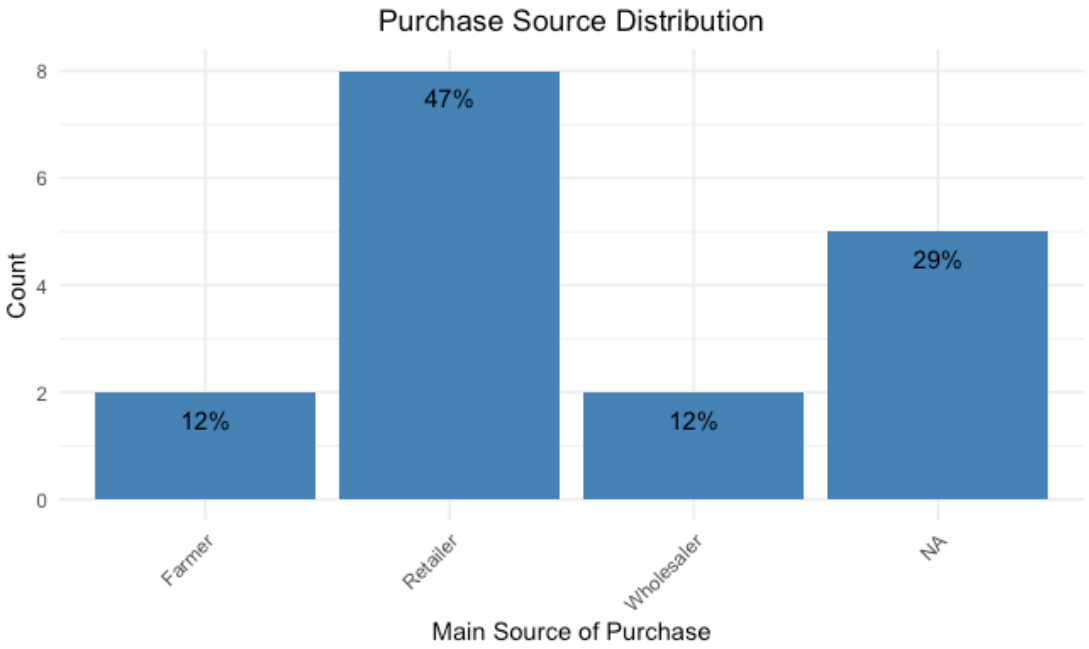
When it comes to education level, the majority (76.5%) reported having achieved university-level studies. About 12% have completed secondary studies, while 12% have not completed primary studies, and one respondent (about 6%) completed primary studies.



In terms of area of residence, 59% of respondents live in urban areas, while 29% reside in rural regions. A small minority (12%) live in suburban areas.

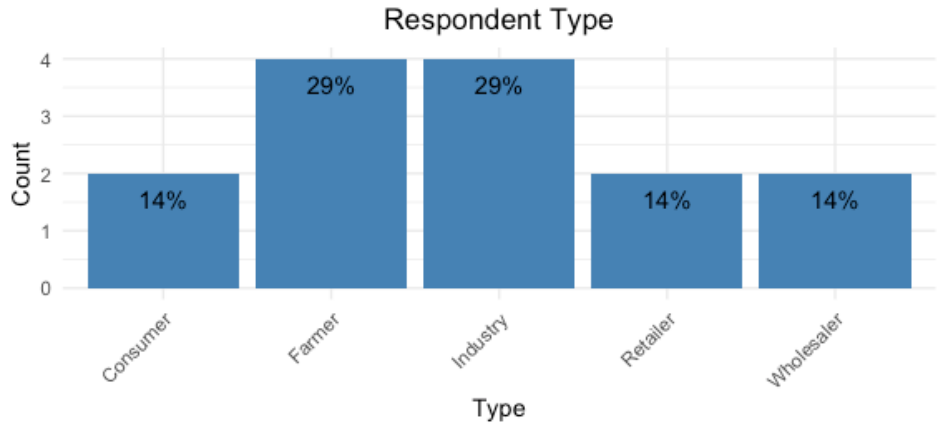


For the respondents who are not carob producers, the majority (47%) purchase their carob primarily from retailers. Others purchase from farmers (17.6%) and wholesalers (12%).

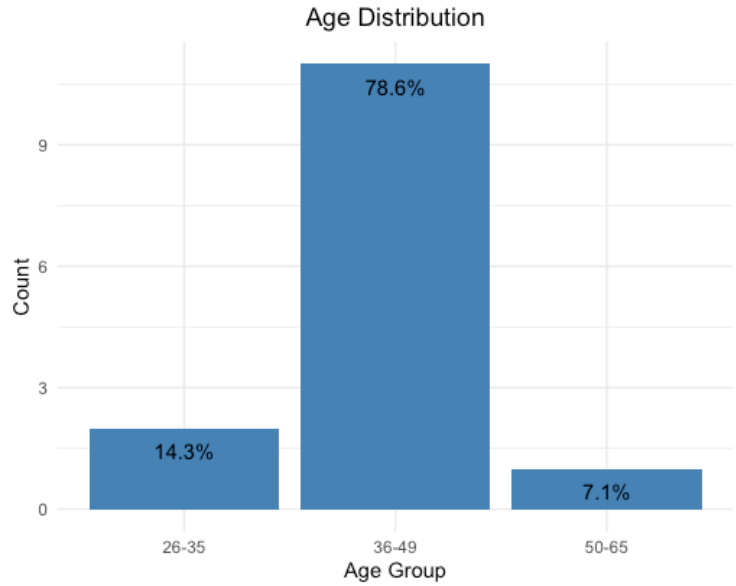


3.6 MOROCCO – DRIED FIGS

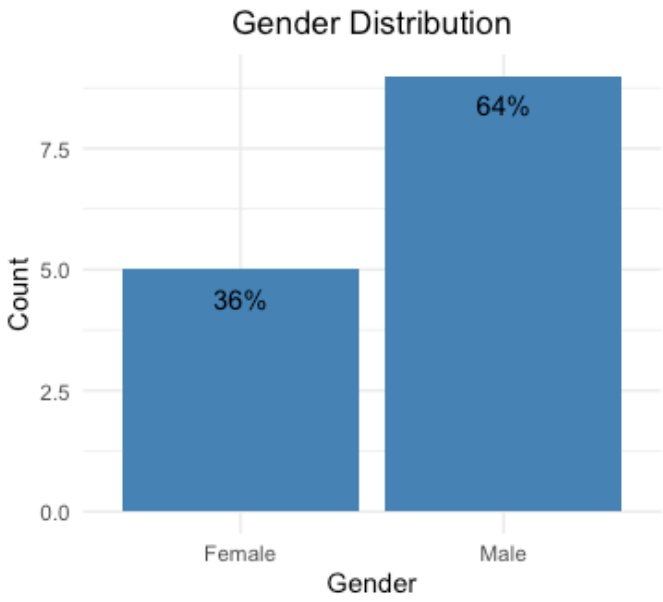
In this survey, 14 respondents participated. The largest groups were farmers and Industry (29% each). The rest of the sample comprised of consumers, retailers and wholesalers each representing 14% of the total sample.



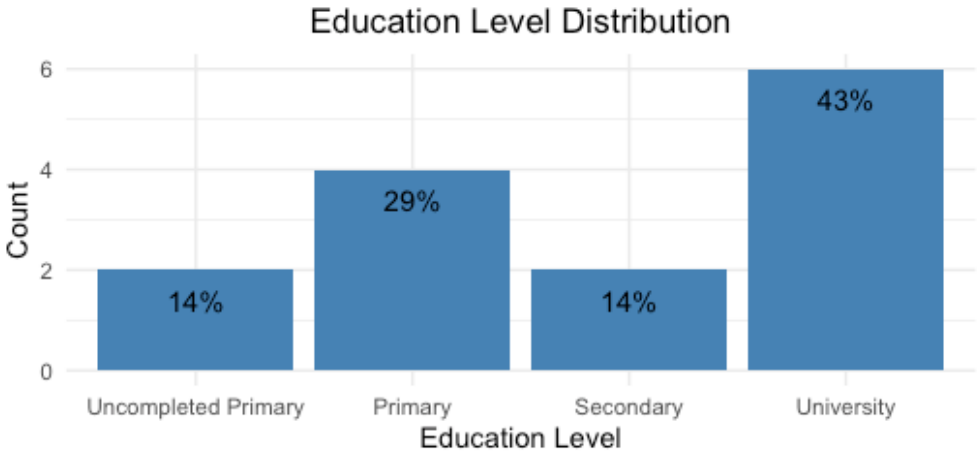
In terms of age, 78.6% of the respondents fell into the 3rd category (36-49 years old), while 14.3% fell into the 2nd category (26-35 years old) and 7.1% in the 50-65-years-old group.



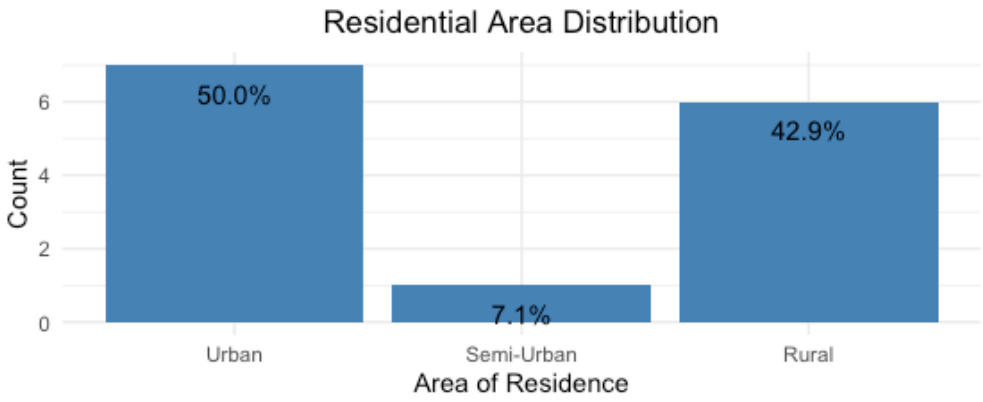
As for gender, the majority of the respondents (64%) were male, while the remaining 36% were female.



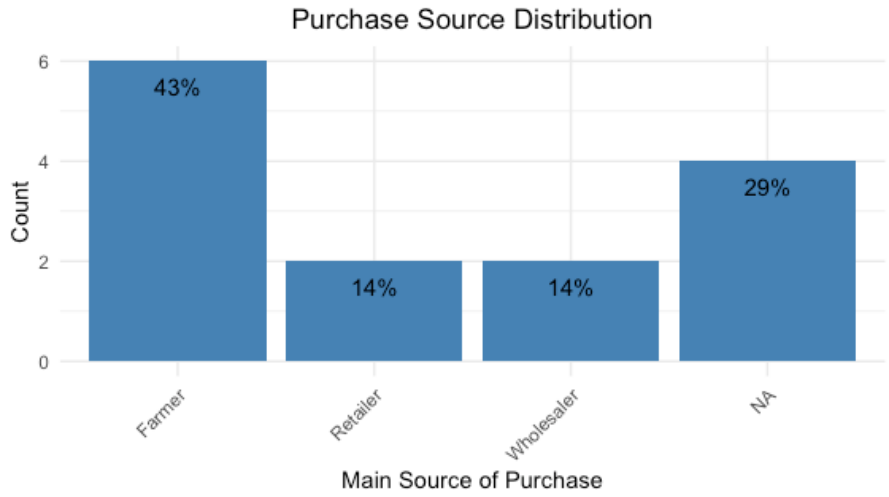
Concerning education, 43% of the respondents had achieved university-level studies, 29% had completed primary studies, and 14% had completed secondary studies. The remaining 14% had not completed any formal education level.



Half of the respondents (50.7%) lived in urban areas, 42.9% lived in rural areas and 7.7% in Semi-urban areas.



Regarding the purchase of figs, respondents had different preferences. 43% of them bought figs from farmers, and 14% from wholesalers and retailers.



4 RESULTS

In this section, we present the results of the econometric models for each country and product. The "**" and "*" next to the estimates indicate that the corresponding estimate is statistically significant at the 0.01 or 0.05 level, respectively.

In the Multinomial Logit (MNL) model tables, each cell in the table represents a coefficient estimate for a specific variable and inequality measure. The row β_{margin} contains the estimated coefficients for the total market profit margin variable, which is defined as the retailer price minus the production cost. The row β_{ineq} contains the estimated coefficients for the inequality measures, which vary according to the column headers (Atkinson, BO, DA, Gini, Pietra, Theil, and $(CoV)^2$). The row β_{profit} contains the estimated coefficients for the profit variable. The rows $\beta_{margin\times Deliberation}$, $\beta_{ineq\times Deliberation}$, and $\beta_{profit\times Deliberation}$ contain the estimated coefficients for the interaction terms between the deliberation dummy variable (which equals 1 after the deliberation process) and the market profit margin, the inequality measure and profit variables, respectively. These coefficients represent the changes in the effects of these variables on the choice probability due to the deliberation process. These changes are estimated separately for each measure of inequality, as indicated by the corresponding columns in the table.

The RPL tables shows the results from a Random Parameters Logit (RPL) model, where each column corresponds to a different measure of inequality used in the model. The μ_{margin} row represents the mean of the estimated market profit margin parameter and σ_{margin} row represents the estimate of its standard deviation. The μ_{ineq} row corresponds to the estimated mean of the inequality measure used indicated by the column header. For instance, the cell in the Atkinson column and the μ_{ineq} row contains the estimated mean of the parameter associated with the Atkinson measure. Similarly, the cell in the BO column and the μ_{ineq} row contains the estimated mean of the BO measure of inequality, and so on. The σ_{ineq} row represents the standard deviation of the distribution parameters for the normally distributed random parameters. The μ_{profit} and σ_{profit} rows represent the

estimated mean and standard deviation of the profit parameter, respectively. The λ_{profit} row represents an extra distribution parameter for profit, since a skewed normal distribution is used. The rows $\mu_{margin}: Deliberation$, $\mu_{ineq}: Deliberation$, and $\mu_{profit}: Deliberation$ represent the heterogeneity in the random parameters means due to the deliberation process. In particular, $\mu_{margin}: Deliberation$ represents the shift in the mean of the market profit margin random parameter due to the deliberation process. Similarly, $\mu_{ineq}: Deliberation$ and $\mu_{profit}: Deliberation$ represent the shifts in the means of the inequality and profit random parameters, respectively, due to the deliberation process. These shifts are estimated separately for each measure, as indicated by the corresponding columns in the table.

4.1 SPAIN – TOMATO

The results from the estimations for both the MNL and the RPL models in the case of Tomato in Spain are given in Tables 2 and 3, respectively.

In both models, the coefficients for the market profit margin (β_{margin} and μ_{margin}) are positive and statistically significant across all inequality measures. This suggests that actors in the supply chain, prefer scenarios with higher overall profit margin, i.e., scenarios where the retailer price is higher than the production cost, so that the profit pie is maximised for the intermediaries. The coefficients for the inequality measures (β_{ineq} and μ_{ineq}) are negative and statistically significant across all inequality measures in both models. This indicates a general preference for scenarios with lower levels of inequality among the profits of the different actors in the supply chain. The specific magnitude and significance of these coefficients vary depending on the inequality measure used, reflecting the different ways these measures capture the concept of inequality.

Table 2. MNL model Estimates (Spain-Tomato)

Estimate	Inequality Measure						
	Atkinson	BO	DA	Gini	Pietra	Theil	$(CoV)^2/2$
β_{margin}	1.914**	3.378**	3.481**	1.961**	1.747**	1.853**	1.774**
β_{ineq}	-8.964**	-4.93**	-5.458**	-3.684**	-4.506**	-4.769**	-2.243**
β_{profit}	4.596**	4.578**	4.606**	4.597**	4.613**	4.598**	4.609**
$\beta_{margin\times Delil}$	8.542**	4.988**	6.176**	3.614**	3.966**	4.265*	1.85*
$\beta_{ineq\times Deliber}$	-2.839**	-4.316**	-4.598**	-2.883**	-2.694**	-2.789**	-2.733**
$\beta_{profit\times Delibe}$	-5.424**	-5.404**	-5.433**	-5.423**	-5.441**	-5.429**	-5.443**
N	277	277	277	277	277	277	277
LL	-261.41	-263.25	-264.29	-263.63	-261.63	-260.77	-260.68
AIC	534.83	538.5	540.58	539.26	535.25	533.54	533.37
BIC	556.57	560.24	562.32	561.01	557	555.29	555.11

The coefficients for the profit variable (β_{profit} and μ_{profit}) are positive and statistically significant across all inequality measures in both models, suggesting that all actors in the supply chain prefer scenarios where their own profit is higher, as expected.

Finally, the coefficients for the interaction terms between the deliberation dummy and the profit margin, inequality, and profit variables ($\beta_{margin\times Deliberation}$, $\beta_{fair\times Deliberation}$, and $\beta_{profit\times Deliberation}$ in the MNL model, and $\mu_{eff}: Deliberation$, $\mu_{ineq}: Deliberation$, and $\mu_{profit}: Deliberation$ in the RPL model) indicate how the deliberation process affects the preferences for these variables. In general, the deliberation process seems to shift the preferences towards scenarios with lower overall profit margin, lower inequality, and lower profit. The specific effects of the deliberation process vary depending on the inequality measure used. What is also important to note is that none of the estimated distribution parameters is statistically significant, reflecting that there is no heterogeneity in the preferences of the Spanish tomato stakeholders.

Table 3. RPL model Estimates (Spain-Tomato)

	Atkinson	BO	DA	Gini	Pietra	Theil	VAR
μ_{margin}	1.86**	3.315**	2.573**	1.893**	1.698**	1.806**	1.729**
σ_{margin}	-0.002	-0.002	-0.001	-0.002	-0.002	-0.002	-0.002
μ_{ineq}	-8.926**	-4.893**	-4.667**	-3.667**	-4.487**	-4.75**	-2.235**
σ_{fair}	-0.03	-0.012	-0.03	-0.028	-0.02	-0.014	-0.007
μ_{profit}	4.721**	4.696**	4.789**	4.746**	4.728**	4.713**	4.719**
σ_{profit}	0.875	0.863	0.964	0.92	0.866	0.857	0.852
λ_{profit}	-0.025	-0.037	0.064	0.02	-0.034	-0.043	-0.048
μ_{margin}: **Del**	8.589**	5.017**	6.206**	3.649**	3.99**	4.284*	1.859*
μ_{ineq}: **Delib**	-2.85**	-4.334**	-3.808**	-2.897**	-2.705**	-2.8**	-2.744**
μ_{profit}: **Deli**	-5.476**	-5.454**	-5.528**	-5.486**	-5.49**	-5.477**	-5.49**
μ_{margin}	277	277	277	277	277	277	277
σ_{margin}	-261.17	-263.02	-264.27	-263.33	-261.4	-260.55	-260.47
μ_{ineq}	542.34	546.05	548.54	546.65	542.79	541.11	540.94
σ_{fair}	578.58	582.29	584.78	582.89	579.03	577.35	577.18

4.2 SPAIN – FIGS

The results from the estimations for both the MNL and the RPL models in the case of figs in Spain are given in Tables 4 and 5, respectively.

Interestingly, the coefficients for the inequality measures (β_{ineq} and μ_{ineq}) are negative and statistically significant across all inequality measures and models, implying a general preference for scenarios with lower profit inequality among the different actors. The magnitude and significance of these coefficients, however, vary depending on the inequality measure. Also, the positive coefficients for β_{margin} and μ_{margin} suggest a preference for situations where the retailer price significantly exceeds the production cost. However, this effect is not statistically significant in any of the models. The same is true for profits where the positive but not statistically significant coefficients (β_{profit} and μ_{profit}) across all inequality measures in both models indicate a weak universal preference for scenarios with

higher profits. As in the case of the Spanish tomato supply chain, none of the estimated distribution parameters is statistically significant.

Table 4. MNL model Estimates (Spain-Figs)

Estimate	Inequality Measure						
	Atkinson	BO	DA	Gini	Pietra	Theil	$(CoV)^2/2$
β_{margin}	0.383	0.758	0.759	0.406	0.342	0.381	0.338
β_{ineq}	-3.854*	-1.333*	-1.320	-1.715*	-2.434*	-1.972*	-1.08*
β_{profit}	0.981	0.977	1.021	1.016	0.955	0.981	0.957
$\beta_{margin\times Delil}$	-0.082	-0.317	-0.351	-0.115	-0.084	-0.09	-0.075
$\beta_{ineq\times Deliber}$	3.302*	0.758	0.899	0.959	1.294*	1.43	0.627
$\beta_{profit\times Delibe}$	0.47	0.433	0.424	0.406	0.425	0.448	0.436
N	187	187	187.000	187	187	187	187
LL	-196.82	-196.76	-197.480	-196.97	-195.64	-196.77	-195.99
AIC	405.64	405.51	406.970	405.93	403.28	405.53	403.98
BIC	425.03	424.9	426.360	425.32	422.66	424.92	423.36

Finally, in terms of the deliberation effect, the interaction terms between the deliberation dummy and the overall profit efficiency, inequality, and profit variables show that the deliberation process appears to shift preferences towards scenarios with lower market profit margin, reduced levels of inequality, and lower own-profit. However, only the effect on inequality is statistically significant and only for some of the measures.

Table 5. RPL model Estimates (Spain-Figs)

	Atkinson	BO	DA	Gini	Pietra	Theil	VAR
μ_{margin}	0.364	0.724	0.721	0.385	0.324	0.362	0.319
σ_{margin}	-0.005	-0.003	-0.005	-0.015	0.009	-0.007	0.005
μ_{ineq}	-3.697*	-1.272	-1.252	-1.643	-2.356*	-1.892	-1.051*
σ_{fair}	-0.175	-0.014	-0.018	-0.493	0.842	-0.252	0.36
μ_{profit}	1.427	1.373	1.475	1.487	1.348	1.420	1.361

	Atkinson	BO	DA	Gini	Pietra	Theil	VAR
σ_{profit}	0.922	0.893	0.937	0.933	0.878	0.915	0.886
λ_{profit}	0.022	-0.007	0.037	0.033	-0.022	0.015	-0.014
μ_{margin}: **Del**	-0.08	-0.319	-0.355	-0.115	-0.083	-0.089	-0.074
μ_{ineq}: **Delib**	3.334*	0.766	0.913	0.971	1.305*	1.440	0.63
μ_{profit}: **Deli**	0.43	0.407	0.393	0.376	0.403	0.413	0.409
μ_{margin}	187	187	187	187	187	187.000	187
σ_{margin}	-196.53	-196.530	-197.160	-196.64	-195.43	-196.49	-195.77
μ_{ineq}	413.06	413.050	414.310	413.290	410.86	412.980	411.53
σ_{fair}	445.37	445.360	446.630	445.600	443.17	445.290	443.85

4.3 FRANCE – FIGS

The results from the estimations for both the MNL and the RPL models in the case of figs in France are given in Tables 6 and 7, respectively.

Table 6. MNL model Estimates (France-Figs)

Estimate	Inequality Measure						
	Atkinson	BO	DA	Gini	Pietra	Theil	$(CoV)^2/2$
β_{margin}	-7.291**	-3.748	-3.707	-7.117*	-7.778**	-7.511**	-7.845**
β_{ineq}	-6.999**	-8.521**	-9.57**	-3.169**	-3.817**	-3.777**	-1.883**
β_{profit}	11.601	12.572	13.143	12.373	11.716	11.207	11.199
$\beta_{margin\times Delil}$	9.736**	8.785**	10.33**	3.811**	4.68**	5.112**	2.51**
$\beta_{ineq\times Deliber}$	10.139**	5.938	5.793	9.636**	10.471**	10.383**	10.77**
$\beta_{profit\times Delibe}$	-2.156	-4.911	-5.372	-4.126	-3.229	-1.851	-1.998
N	220	220	220	220	220	220	220
LL	-218.39	-222.69	-223.02	-220.26	-219.05	-217.84	-217.45
AIC	448.78	457.38	458.03	452.51	450.09	447.68	446.91
BIC	469.14	477.74	478.39	472.88	470.46	468.04	467.27

The coefficients for the inequality measures (β_{ineq} and μ_{ineq}) are negative and statistically significant across all inequality measures and models, implying a

general preference for scenarios with lower profit inequality among the different actors. The negative coefficients for β_{margin} and μ_{margin} suggest a preference for situations where the retailer price is significantly close to the production cost. For profits, we get positive but not statistically significant coefficients (β_{profit} and μ_{profit}) across all inequality measures in both models, indicating a weak universal preference for scenarios with higher profits.

Table 7. RPL model Estimates (France-Figs)

	Atkinson	BO	DA	Gini	Pietra	Theil	VAR
μ_{margin}	-7.534**	-4.002	-3.972	-7.332**	-7.99**	-7.739**	-8.063**
σ_{margin}	1.725	1.55	1.61	1.642	1.646	1.7	1.707
μ_{ineq}	-6.942**	-8.377**	-9.43**	-3.145**	-3.793**	-3.754**	-1.875**
σ_{fair}	0.04	0.144	0.367	0.021	0.027	0.024	0.013
μ_{profit}	13.212	13.943	14.625	13.776	13.072	12.66	12.539
σ_{profit}	0.006	0.064	0.086	0.018	-0.111	-0.031	-0.17
λ_{profit}	-0.894	-0.836	-0.814	-0.882	-1.011	-0.931	-1.07
μ_{margin}: Del	10.355**	6.105	5.964	9.824**	10.668**	10.594**	10.98**
μ_{ineq}: Delib	9.812**	8.795**	10.377**	3.838**	4.715**	5.156**	2.534**
μ_{profit}: Deli	-2.506	-5.17	-5.663	-4.373	-3.466	-2.084	-2.136
μ_{margin}	220	220	220	220	220	220	220
σ_{margin}	-218.11	-222.48	-222.78	-220.01	-218.8	-217.57	-217.18
μ_{ineq}	456.21	464.97	465.57	460.03	457.6	455.14	454.36
σ_{fair}	490.15	498.9	499.51	493.96	491.54	489.08	488.3

In the RPL model, the distribution parameters for market efficiency (σ_{margin}), inequality (σ_{ineq}) and profit ($\sigma_{profit}, \lambda_{profit}$) are not statistically significant across all inequality measures, suggesting that there is no significant heterogeneity in the preferences across the stakeholders. The same is true for the skewness parameter of profit (λ_{profit}) is negative but not statistically significant across all inequality measures, suggesting that the distribution of preferences for profit is not significantly skewed.

In terms of the deliberation effect, the interaction terms between the deliberation dummy and the profit margin, inequality, and own-profit variables show that the deliberation process appears to shift preferences towards scenarios with lower margin, reduced levels of inequality, and lower profit. However, only the effects on inequality and profit margin is statistically significant and across measures.

4.4 FRANCE – CHESTNUTS

The results from the estimations for both the MNL and the RPL models in the case of chestnuts in France are given in Tables 8 and 9, respectively.

Table 8. MNL model Estimates (France-Chestnut)

Estimate	Inequality Measure						
	Atkinson	BO	DA	Gini	Pietra	Theil	$(CoV)^2/2$
β_{margin}	6.788**	6.973**	6.572**	6.841**	6.477**	6.546**	6.223**
β_{ineq}	0.407	-1.487	0.733	0.385	-0.543	-0.366	-0.493*
β_{profit}	1.293	1.132	1.275	1.346	1.098	1.135	0.965
$\beta_{margin\times Delil}$	-7.252**	-7.595**	-7.799**	-7.269**	-7.019**	-7.125**	-6.931**
$\beta_{ineq\times Deliber}$	-1.002	2.273	2.551	-0.186	0.022	-0.331	-0.007
$\beta_{profit\times Delibe}$	2.232	2.562	2.602	2.343	2.371	2.262	2.334
N	195	195	195	195	195	195	195
LL	-203.93	-203.91	-203.78	-203.9	-203.73	-203.67	-202.91
AIC	419.86	419.83	419.57	419.8	419.46	419.33	417.82
BIC	439.49	439.46	439.21	439.44	439.1	438.97	437.46

The coefficients for market efficiency (β_{margin} and μ_{margin}) are positive and statistically significant across all inequality measures and models, indicating a general preference for scenarios where the retailer price significantly exceeds the production cost. This effect is consistent across all inequality measures and models. The coefficients for profit (β_{profit} and μ_{profit}) on the other hand are positive across

all inequality measures in both models, indicating a preference for scenarios with higher profits, but do not influence preferences statistically significantly. The coefficients for inequality (β_{ineq} and μ_{ineq}) vary in sign and significance across the different inequality measures and models, suggesting that the preference for inequality is contingent on the specific measure of inequality used. For instance, in both the MNL and RPL models, the coefficient for inequality is not statistically significant for most inequality measures, indicating that inequality does not significantly influence preferences. An exemption is the squared coefficient of variation measure (CoV^2), where the coefficient for inequality is negative and statistically significant, suggesting a preference for more fairness in profit distributions. Finally, In the RPL model, the distribution parameters for all random parameters are not statistically significant suggesting that there is no significant heterogeneity in the preferences for the attributes of interest.

Table 9. RPL model Estimates (France-Chestnut)

	Atkinson	BO	DA	Gini	Pietra	Theil	VAR
μ_{margin}	6.786**	3.442	2.365	3.499	6.478**	6.543**	6.223**
σ_{margin}	0.004	-0.099	-0.065	-0.08	0.002	0.003	0.003
μ_{ineq}	0.405	0.751	3.751	0.939	-0.542	-0.366	-0.494*
σ_{fair}	-0.005	0.02	-0.008	0.016	-0.002*	-0.003*	-0.001
μ_{profit}	1.29	5.249	5.938	5.79	1.095	1.124	0.959
σ_{profit}	0.453	6.083	6.71	6.547	0.45	0.452	0.45
λ_{profit}	-0.447	5.182	5.81	5.647	-0.45	-0.448	-0.45
μ_{margin}: $\boldsymbol{Del}$	-7.25**	-8.099**	-8.332**	-7.831**	-7.017**	-7.124**	-6.932**
μ_{ineq}: $\boldsymbol{Delib}$	-1.00	2.246	2.433	-0.242	0.022	-0.33	-0.007
μ_{profit}: $\boldsymbol{Deli}$	2.238	3.022	3.08	2.859	2.378	2.279	2.343
μ_{margin}	195	195	195	195	195	195	195
σ_{margin}	-203.93	-203.42	-202.82	-203.06	-203.73	-203.67	-202.91
μ_{ineq}	427.86	426.84	425.63	426.11	427.46	427.33	425.82
σ_{fair}	460.59	459.57	458.36	458.84	460.19	460.06	458.55

In terms of the deliberation effect, the interaction terms between the deliberation dummy and the market efficiency, inequality, and profit variables show that the deliberation process appears to shift preferences towards scenarios with lower market efficiency, reduced levels of inequality, and higher profit. However, only the effect on market efficiency is statistically significant, showing that deliberation leads to preferences over supressed market profit margins.

4.5 MOROCCO – CAROB

The results for the carob supply chain in Morocco are presented in Tables 10 and 11 for the MNL and the RPL models, respectively.

Table 10. MNL model Estimates (Morocco-Carob)

Estimate	Inequality Measure						
	Atkinson	BO	DA	Gini	Pietra	Theil	$(CoV)^2/2$
β_{margin}	0.237*	0.282*	0.277*	0.243*	0.233*	0.232*	0.227*
β_{ineq}	-2.626	-0.152	-0.126	-0.737	-1.251	-1.469	-0.796*
β_{profit}	0.367**	0.37**	0.372**	0.371**	0.368**	0.367**	0.366**
$\beta_{margin \times Delil}$	-0.079	-0.157	-0.174	-0.083	-0.074	-0.074	-0.070
$\beta_{ineq \times Deliber}$	4.046*	0.278*	0.354	1.783	1.891*	2.085*	0.985*
$\beta_{profit \times Delibe}$	-0.350*	-0.352*	-0.354*	-0.353*	-0.351*	-0.350*	-0.350*
N	340	340	340	340	340	340	340
LL	-349.75	-350.35	-350.22	-350.27	-350.11	-349.58	-349.31
AIC	711.49	712.69	712.45	712.55	712.21	711.16	710.62
BIC	734.47	735.67	735.42	735.52	735.19	734.13	733.59

In the MNL model, the coefficients for market efficiency (β_{margin}) are positive and statistically significant across all inequality measures, suggesting a preference for scenarios where the retailer price significantly exceeds the production cost. The coefficient for inequality (β_{ineq}) are negative, but not statistically significant for most inequality measures, indicating that inequality does not significantly influence preferences. The coefficient for profit (β_{profit}) is positive and statistically significant across all inequality measures, indicating a preference for scenarios with

higher profits. The deliberation process appears to shift preferences towards scenarios with lower market efficiency, increased inequality, and lower profit, as indicated by the interaction terms between the deliberation dummy and the overall profit, inequality, and own-profit variables. However, only the effects on market efficiency and own-profit are statistically significant.

Table 11. RPL model Estimates (Morocco-Carob)

	Atkinson	BO	DA	Gini	Pietra	Theil	VAR
μ_{margin}	0.24*	0.28*	0.272*	0.245*	0.236*	0.235*	0.229*
σ_{margin}	0.081	0.08	-0.083	0.083	0.081	0.081	-0.081
μ_{ineq}	-2.479	-0.137	-0.105	-0.656	-1.184	-1.400	-0.766*
σ_{fair}	0.03	-0.001	-0.002	-0.072	-0.028	0.03	-0.004
μ_{profit}	0.396**	0.397**	0.399**	0.401**	0.397**	0.395**	0.395**
σ_{profit}	0.385	0.517	0.378	0.382	0.384	0.385	0.386
λ_{profit}	-0.515	-0.383	-0.522	-0.518	-0.516	-0.515	-0.514
μ_{margin}: $\boldsymbol{Del}$	-0.077	-0.156	-0.173	-0.081	-0.072	-0.072	-0.068
μ_{ineq}: $\boldsymbol{Delib}$	4.084*	0.279*	0.356	1.823	1.93*	2.108*	0.998*
μ_{profit}: $\boldsymbol{Deli}$	-0.369*	-0.371*	-0.374*	-0.373*	-0.37*	-0.368*	-0.368*
μ_{margin}	340	340	340	340	340	340	340
σ_{margin}	-347.73	-348.31	-348.05	-348.1	-348.06	-347.58	-347.31
μ_{ineq}	715.45	716.62	716.1	716.2	716.13	715.16	714.62
σ_{fair}	753.74	754.91	754.39	754.49	754.42	753.45	752.91

In the RPL model, the mean parameters for overall (μ_{margin}) and own (μ_{profit}) profits are statistically significant across all inequality measures, reinforcing the findings from the MNL model. The mean parameter for inequality (μ_{ineq}) is negative, but only statistically significant for the CoV^2 measure, suggesting a weak preference for more inequality in profit distribution. The distribution parameters for market efficiency (σ_{margin}) and inequality (σ_{margin}) are not statistically significant across all inequality measures, suggesting that there is no significant heterogeneity in the preferences for market efficiency and inequality across stakeholders. The distribution parameter for profit (σ_{profit}) is positive, indicating some variation in

the preferences for profit across the population. The deliberation process appears to shift the mean parameters for overall profit, inequality, and profit in the same direction as in the MNL model but only the effects on inequality (for some of the measures, i.e., Atkinson, BO, Pietra, Theil and CoV^2) and own profit are statistically significant.

4.6 MOROCCO – DRIED FIGS

In the case of dried figs in Morocco, the MNL and RPL models provide some interesting insights in Tables 12 and 13.

Table 12. MNL model Estimates (Morocco-Dried Figs)

Estimate	Inequality Measure						
	Atkinson	BO	DA	Gini	Pietra	Theil	$(CoV)^2/2$
β_{margin}	-0.033	-0.014	-0.013	-0.032	-0.034	-0.034	-0.035
β_{ineq}	-3.728	-0.071	-0.075	-1.473	-1.848	-1.914	-0.94
β_{profit}	0.029	0.029	0.029	0.029	0.029	0.029	0.029
$\beta_{margin\times Delil}$	0.045*	0.031	0.030	0.044*	0.046*	0.046*	0.046*
$\beta_{ineq\times Deliber}$	3.099	0.047	0.051	1.511	1.633	1.588	0.715
$\beta_{profit\times Delibe}$	-0.041	-0.041	-0.041	-0.041	-0.042	-0.041	-0.042
N	280	280	280	280	280	280	280
LL	-298.38	-297.850	-298.760	-299.33	-298.56	-298.28	-298.04
AIC	608.76	607.700	609.520	610.66	609.12	608.57	608.09
BIC	630.57	629.510	631.330	632.47	630.93	630.38	629.9

The coefficients for the inequality measures (β_{ineq} and μ_{ineq}) are negative across all inequality measures and models, suggesting a general preference for scenarios with lower profit inequality among the different actors. However, these effects are not statistically significant, indicating that the preference for inequality is not strong or consistent across the different inequality measures. The coefficients for market efficiency (β_{margin} and μ_{margin}) are also negative, suggesting a preference for scenarios where the retailer price is closer to the production cost. However, these effects are not statistically significant either, indicating that the preference for lower

profit margin is not strong or consistent across the different inequality measures. The coefficients for own-profit (β_{profit} and μ_{profit}) are positive across all inequality measures in both models, indicating a preference for scenarios with higher profits. However, these effects are also not statistically significant, suggesting that the preference for profit is not strong or consistent across the different inequality measures. In the RPL model, the standard deviation of the random parameter for profit (σ_{profit}, λ_{profit}) are both statistically significant, suggesting that there is significant heterogeneity in preferences for own-profit.

Table 13. RPL model Estimates (Morocco- Dried Figs)

	Atkinson	BO	DA	Gini	Pietra	Theil	VAR
μ_{margin}	-0.034	-0.014	-0.013	-0.033	-0.035	-0.035	-0.035*
σ_{margin}	-0.008	-0.008	-0.008	0.009	-0.009	-0.009	0.009
μ_{ineq}	-3.715	-0.07	-0.074	-1.465	-1.841	-1.907	-0.937
σ_{fair}	-0.061	0.001	0.001	0.001	-0.023	-0.032	0.011
μ_{profit}	0.028	0.028	0.028	0.028	0.029	0.029	0.029
σ_{profit}	0.45**	0.45**	0.45**	0.45**	0.45**	0.45**	0.45**
λ_{profit}	-0.45**	-0.45**	-0.45**	-0.45**	-0.45**	-0.45**	-0.45**
μ_{margin}: $\boldsymbol{Del}$	0.045*	0.031	0.03	0.045*	0.046*	0.046*	0.046*
μ_{ineq}: $\boldsymbol{Delib}$	3.103	0.047	0.051	1.514	1.636	1.59	0.716
μ_{profit}: $\boldsymbol{Deli}$	-0.041	-0.041	-0.041	-0.041	-0.042	-0.041	-0.041
μ_{margin}	280	280	280	280	280	280	280
σ_{margin}	-298.35	-297.83	-298.74	-299.29	-298.53	-298.26	-298.02
μ_{ineq}	616.71	615.67	617.48	618.59	617.05	616.51	616.03
σ_{fair}	653.06	652.01	653.83	654.94	653.4	652.86	652.38

In terms of the deliberation effect, the interaction terms between the deliberation dummy and the overall efficiency, inequality, and profit variables show that the deliberation process appears to shift preferences towards scenarios with higher market efficiency, reduced levels of inequality, and lower profit. However, only the effect on total profit margin is statistically significant and only for some of the

measures, showing a preference for larger profit margins than before the deliberation process.

5 CONCLUSIONS

The analysis of the six country-product combinations reveals nuanced insights into the preferences of supply chain actors across different contexts.

As expected, there is a general inclination towards scenarios with higher own profits. This preference is particularly noticeable in the supply chains of Spanish tomatoes and figs, and carob in Morocco. Yet, the preference for profit is not uniformly strong or consistent across all country-product combinations which probably means that in some of the case studies, the range of profits that in our experimental design was within a range that is acceptable to all actors, and therefore changes within this range do not significantly alter their preferences. For instance, if the profit levels are already high or low, small increases or decreases might not significantly impact the actors' decisions.

A thread across most scenarios is a preference for scenarios where the retailer price significantly exceeds the production cost, indicating a preference for higher overall profit margins. This is particularly pronounced in the supply chains of Spanish tomatoes, chestnuts in France, and carob in Morocco. The most straightforward explanation is that all actors in a supply chain are typically interested in maximizing their profits. A higher retailer price, assuming costs are kept constant, means a larger "profit pie" to be distributed among the intermediaries in the supply chain. This larger pie could potentially lead to higher profits for farmers, wholesalers and retailers, so they are the ones who drive the results. Another explanation could be that a higher profit margin can serve as a buffer against price volatility, demand uncertainty, or supply disruptions, meaning that the supply chain can absorb some level of cost increase or price decrease without becoming unprofitable. Except from farmers, wholesalers and retailers, the latter might also explain preference for larger margins, also for the industry and consumers, assuming they have a low number of perfect substitutes for the products. Also, it could be the case that participants felt that the supply chain had other unpredictable costs that were not captured in the production cost of our design (e.g., wastage, or the cost of capital), so they opted for higher profit margins that could help cover some of these costs. Finally, a higher

profit margin can also enable investments in quality improvement or sustainability initiatives. For example, it could fund investments in better farming practices, improved processing facilities, or marketing efforts. Stakeholders that were deeply involved in the relevant supply chain might capitalize these long-term benefits of investments into the profit margin.

However, this trend is again not universal. For instance, in the Moroccan fig supply chain, actors show a preference for scenarios where the retailer price is closer to the production cost, although this effect is not statistically significant and in the case of figs in France, actors show the same preference but the effect is statistically significant, suggesting a different set of dynamics at play. This can be anticipated if the results are driven by stakeholder groups who prefer a smaller margin between the retailer price (e.g. consumers) or those that view the disparity of retail price production cost as a matter of inequality or fairness. This is particularly true in contexts where producers are perceived to be disadvantaged or exploited. Another reason that could also be relevant for intermediaries is that high retail prices can drive consumers to cheaper substitutes, so keeping the price close to the cost can be a strategy to maintain a sustainable market. This is particularly important in markets where consumers are price sensitive, and/or there is a plethora of substitutes.

When it comes to inequality of profits among intermediaries, defined as lower profit inequality among different actors, there is a general preference across most contexts. This is especially evident in the supply chains of Spanish tomatoes and figs, as well as figs in France. However, similar to the preference for own-profit, the strength and consistency of this preference for inequality varies across different country-product combinations and inequality measures. This is an indication that stakeholders have a sense of fairness and equity and may believe that all actors in the supply chain should share the profits equitably, especially in supply chains where there is a significant power imbalance, and smaller actors (like farmers or small producers) may be disadvantaged. Low profit inequality can also be thought as a way to foster better long-term relationships and trust among supply chain actors. If profits are distributed more equally, actors may feel that they are being treated fairly and are more likely to cooperate and collaborate, which can lead to

better outcomes for all. Finally, in some markets, consumers are increasingly demanding fair trade and ethically produced products and thus, stakeholders might feel that supply chains with low profit inequality may be better able to meet this demand and enhance their reputation with consumers.

The deliberation process, which is meant to imitate the market dynamics (information sharing, negotiations, etc.) introduces another layer of complexity to these preferences as it can shift preferences in various ways. For instance, in most cases (tomatoes and figs in Spain, chestnuts in France, carob in Morocco) deliberation leads to preferences for lower total profit margin, which is an indication that stakeholders may have gained a better understanding of the costs involved in production and the value contributed by different actors in the supply chain, which would lead them to prefer a lower profit margin that more accurately reflects these costs and values. In cases where a high profit margin is perceived as the result of power imbalances or exploitation, then deliberation may lead stakeholders to place greater emphasis on fairness and equity and seek to reduce this type of inequality. This is particularly important in cases where consumers' representatives in the deliberation process are highly influential, leading to the understanding by all actors that there is a strong market preference for products from supply chains with lower profit margins. However, in the case of figs in France and dried figs in Morocco, deliberation results in preferences for higher margin meaning that a better understanding of the value that each actor in the supply chain contributes, as well as the costs they incur lead to the belief that a higher profit margin is justified. It could also mean that the actors are convinced about the need for risk compensation, long-term viability and investments in quality improvements, sustainable practices, or other factors that could benefit the supply chain in the long term.

In the case of fairness, when deliberation did cause some preference change, it consistently led to reduced levels of fairness. This means that understanding the different roles, responsibilities, and contributions of each actor in the supply chain has made actors ready to accept that some intermediaries should earn more due to their higher contributions or responsibilities or their higher risks or number of investments. Also, behavioral economics research has shown that people often

distinguish between social norms and market norms in transactions. Social norms are the unwritten rules of behavior that are considered acceptable in a group or society, while market norms are the rules and behaviors driven by the economic market, such as supply and demand or competition. In the context of the supply chain, social norms might dictate that all actors should share equally in the profits, reflecting a sense of fairness and cooperation. However, market norms might lead to unequal profit distribution, reflecting the different roles, responsibilities, risks, and investments of each actor. During the deliberation process, stakeholders may initially approach the issue from a social norms perspective, expecting equal profit distribution. However, as they gain a better understanding of the market dynamics at play, they may start to accept the market norms, recognizing that some level of profit inequality is a natural outcome of these dynamics. Finally, the negotiation and compromise inherent in the deliberation process may lead stakeholders to accept a balance between social and market norms. They may agree to tolerate more inequality (a market norm) in exchange for other benefits, such as higher overall profits or improvements in other aspects of the supply chain (aligning with social norms of mutual benefit and cooperation). As a result, the shift from social norms to market norms during deliberation could explain why stakeholders become more tolerant of inequality.

The discussion regarding social and market norms and the complex interplay between social and market norms in shaping preferences and decisions (but in the opposite direction as above), is also relevant to our consistent finding of the reduction in the preference weight given to own profit after the deliberation process. As discussed earlier, if deliberation facilitated a shift from market norms (focused on competition and individual gain) to social norms (focused on cooperation and collective well-being), as a result of fostering empathy and perspective-taking, it might lead stakeholders to consider the interests of others in addition to their own. Also, from a more "selfish" standpoint, stakeholders might have realized that their success is tied to the success of other actors in the supply chain and this recognition of interdependence could have led to a shift in focus from individual profit to collective well-being, improved relationships with other actors, increased stability of the supply chain, and/or advancements in other areas of importance to them.

6 DISCUSSION

The results of this study can be instrumental in designing new business models in agriculture by providing insights into the preferences of different actors in the supply chain and how these preferences can be influenced by deliberation, which simulates real market dynamics.

Our findings reveal a general inclination towards markets with larger profit margins, suggesting the need for business models that emphasize added value. This could be achieved through the creation of unique, differentiated products that not only enhance the overall profit margin but also offer a competitive edge in the marketplace. Efficiency enhancements in the production process, such as the adoption of innovative technologies or farming practices, can also contribute to higher profit margins by reducing production costs, even if the selling price remains unchanged. Moreover, our results suggest that stakeholders in many of the value chains we studied, could benefit from premium pricing strategies. These strategies target niche markets where consumers are willing to pay a premium for specific product attributes, such as organic, locally-sourced, or artisanal products. Lastly, effective branding can command higher prices for products, thereby boosting profit margins. This could involve strategic investments in marketing and storytelling to foster a strong bond with consumers and set the products apart from the competition.

Our findings also indicate an initial preference for more evenly distributed profits among farmers, wholesalers, and retailers. This insight could guide the development of business models that prioritize equitable profit distribution. Such models could incorporate fair pricing, transparency in cost structures, and equitable payment terms such as prompt payment policies, fair contract terms, or mechanisms to shield actors from price volatility. Moreover, the implementation of profit-sharing mechanisms, such as cooperatives, joint ventures, or other collaborative business models, could further promote equity in profit distribution. From a policy perspective, these findings underscore the importance of engaging with

policymakers, participating in industry forums, or supporting campaigns that advocate for fair trade and equitable profit distribution. This active involvement can help shape policies that foster a more balanced distribution of profits within the industry.

However, the way deliberation shaped preferences in our experiment, might give us a guide on how the design of business models works in theory vs how it works in practice. Specifically, the effects of deliberation demonstrate that once business models are implemented in real market settings, stakeholder preferences may not align perfectly with the initial design. This underscores the importance of creating flexible business models that can adapt to evolving preferences and market dynamics. To achieve this, it's crucial to regularly review and update the business model, considering feedback from various supply chain actors. This highlights the importance of active stakeholder engagement, perhaps through initiatives like living labs. Regular communication and consultation can shed light on potential misalignments between business models and stakeholder preferences, enabling proactive adjustments. Moreover, this ongoing dialogue can help educate stakeholders about the benefits of the chosen business models and maintain transparency about profit distribution. This transparency can foster trust and commitment among different actors in the supply chain. To keep a pulse on the market, regular market research and monitoring are essential. This could involve tracking changes in consumer behaviour, competitor activity, and broader market trends, which can inform necessary adjustments to the business model. Finally, to ensure consistency in preferences between the design and implementation phases of a business model, it's beneficial to implement commitment devices. These are incentives, such as contracts or payment schemes, that align with the specific model and encourage desired behaviours. By aligning incentives with the business model, stakeholders are more likely to maintain their initial preferences.

REFERENCE LIST

Atkinson, A. B. (1970). On the Measurement of Inequality. Journal of Economic Theory, 2, 244-263.

Barabas, J. (2004). How Deliberation Affects Policy Opinions. American Political Science Review, 98, 687-701.

Bolton, G. E., & Ockenfels, A. (2000). ERC: A theory of equity, reciprocity, and competition. American Economic Review, 91(1), 166-193.

Caluwaerts, D., & Reuchamps, M. (2014). Does Inter-Group Deliberation Foster Inter-Group Appreciation? Evidence from Two Experiments in Belgium. Politics, 34, 101-115.

Cohen, G. L. (2003). Party over policy: The dominating impact of group influence on political beliefs. Journal of Personality and Social Psychology, 85(5), 808-822.

Davies, J. B. (2016) The Gini Coefficient and Personal Inequality Measurement. Department of Economics Research Report 2016-1. Department of Economics, University of Western Ontario, London, ON, Canada. URL: http://ir.lib.uwo.ca/economicsresrpt/812/ (accessed 28th July 2023).

Fraile, M. (2014). Does deliberation contribute to decreasing the gender gap in knowledge? European Union Politics, 15, 372-388.

Gini, C. (1921). Measurement of inequality of incomes. The Economic Journal, 31(121), 124-126.

Grönlund, K., Setälä, M., & Herne, K. (2010). Deliberation and civic virtue: lessons from a citizen deliberation experiment. European Political Science Review, 2, 95-117.

Hess, S., Train, K., Polak, J.W., (2006). On the use of a Modified Latin Hypercube Sampling (MLHS) method in the estimation of a Mixed Logit model for vehicle choice. Transportation Research Part B 40, 147–163.

Johnson, R. W., MacArthur, A., & Wright, E. F. (1991). Timing of reasons analysis and attitude-behavior consistency. Psychological Reports, 69, 603-608.

Kaplan, M. F. (1984). How do people influence in jury deliberation? A social psychological view. Behavioral Sciences & Law, 2, 407-412.

Loch, C. H., & Wu, Y. (2008). Social Preferences and Supply Chain Performance: An Experimental Study. Management Science, 54(11), 1835-1849.

McGarty, C., Haslam, S. A., Hutchinson, K. J., & Turner, J. C. (1994). The effects of salient group memberships on persuasion. Small Group Research, 25(2), 267-293.

Myers, C. D. (2017). Interests, information, and minority influence in deliberation. The Journal of Politics, 79(3), 804-822.

Pelletier, D. L., Kraak, V. I., McCullum, C., Uusitalo, U., & Rich, R. M. (1999). The shaping of collective values through deliberative democracy: An empirical study from New York's North Country. Policy Sciences, 32, 103-131.

Pietra, G. (1915). Delle relazioni tra gli indici di variabilità. Nota I. Atti Regio Istituto Veneto, 74(II), 775-792.

Theil, H. (1979), "The measurement of inequality by components of income", Economics Letters, Vol. 2, No 2, pp. 197-199.

Train, K. E. (2009). Discrete choice methods with simulation. Cambridge University Press.

Walton, M. L. (2013). A Case Study Investigating the Influence of Deliberative Discussion on Environmental Preferences. Society & Natural Resources, 26, 303-324.

Wilson, T. D., & Dunn, D. S. (1986). Effects of introspection on attitude-behavior consistency: Analyzing reasons versus focusing on feelings. Journal of Personality and Social Psychology, 22, 249-263.

Wilson, T. D., Bybee, J. A., Dunn, D. S., Hyman, D. B., & Rotondo, J. A. (1984). Effects of analyzing reasons on attitude-behavior consistency. Journal of Personality and Social Psychology, 47, 5-16.

The LAB4SUPPLY project has received funding from the European Union's PRIMA Horizon 2020 research and innovation programme.

APPENDIX A (COMMON)

(**Read aloud**): Welcome to our study. This survey is part of LAB4SUPPLY which is a Researchand Development project that aims to provide market solutions to address the current difficulties of Mediterranean smallholders and traditional farmers. Before you proceed, please, remember that this survey is fully anonymous (no identifying information is collected) and the information collected is fully confidential.

(**Only for researcher**): [The participants are randomly allocated to different seats. The subjects cannot communicate during the experiment with each other by any means and their choices are not shown to the other participants.]

(**Read aloud**): You will remain anonymous throughout the study. The analysis will take placeon aggregate level, and the choices made by an individual subject cannot be associated withhim, nor will his identity be revealed to the other participants.

(**Read aloud**): We will first go through the instructions together, after which you have a chance to read them independently.

(**Read aloud**): Please remain silent during the experiment. Each participant will make their own decisions independently. If you have a question, please raise your hand. A researcher will come to you, and you will be instructed individually.

(**Read aloud**): Please turn off your cellphone for the duration of the study.

(**Read aloud**): The study has four parts. In Part I we are asking you to answer a total of six demographic questions.

PART I

Please answer the following questions:

1. Please indicate in which of the following categories you fall in:
   - Farmer
   - Wholesaler
   - Retailer
   - Other (_____)

2. What is the main product you produce/sell?
   - Tomatoes
   - Figs
   - Chestnuts
   - Other (_____)

3. What is your age?

- 18-25 years old
- 26-35 years old
- 36-49 years old
- 50-65 years old
- More than 65 years old

4. What is your gender?
   - Female
   - Male
   - Nonbinary
   - I Prefer not to state

5. What is the highest educational level you achieved?
   - Uncompleted primary studies
   - Primary studies
   - Secondary studies
   - University studies

6. Area of residence:
   - Urban
   - Peri-urban/Semi-urban
   - Rural

7. If you are **not a producer**, please indicate from where do you **mainly** buy the_?

_____

Read aloud to the participants:

We kindly ask you not to talk to other participants. If you have a question, please ask us inprivate and we will gladly answer it. It is very important that you follow this rule.

In Part II you will make 10 decisions. You will be asked to choose between options presenton cards. All the choice cards contain three columns. Each column represents three hypothetical scenarios for prices adopted to produce the product ____. Each set of options varies in terms of prices offered by the producer, the wholesaler, and the retailer.For each choice card, please indicate which scenario (A, B, or C) you would be likely to choose if offered to you. Please tick one box only. It is required that all questions are answered.

Please raise your hand if you have any questions.

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APPENDIX B (DELIBERATION)

(**Only for researcher**): [Each subject now picks a card that lists the features relevant to each group (Farmers, Wholesalers, Retailers, Consumers, Industry). Then each subject has to read all the features that fall in his/her category and a) pick the 4 most important features and b) sort these 4 features by order of importance (most important to least important).]

(**Read aloud**): The forthcoming **deliberation** is **public**, **non-structured**, **free**, and **non-strategic**. You are asked to sort in order of priority which of the features on the card you own are most important to you. Please pick the 4 most important to you and sortthem from the most important to the least important.

(**Only for researcher**): [When all subjects finish selecting and sorting the features, they must read aloud the most important factors to him/her (starting from the farmer). After all subjects read the most important features, a dialogue is encouragedamong the subjects with a duration of a 20 minutes. While each participant reads aloud the sortation, a person has to write the top 4 features for each on a table making the features visible to everyone in the room. This will facilitate the dialogue that will take place among the participants.]

(**After the completion read aloud**): Please start by reading aloud the top 4 features that are the most important to you. After hearing carefully what each participant saysyou are encouraged to discuss with each other, expressing your agreement or disagreement, and explaining every time your thesis to someone else's opinion through dialogue.

PART III

Please sort in **order of priority** which of the following problems are the most important in doing your business (top4).

Producers

- Prices below the production cost.
- Price of inputs and expenses (high costs).
- Lack of agreement with trading partners.
- Lack of price transparency.
- Lack of partnership with other producers.
- Administrative regulations that hinder marketing.

Wholesalers

- Suppliers (farmers) get a fair price.
- Competition from big distribution (supermarkets).
- Competition from foreign-imported products.

- Pricing strategy.
- Availability of local suppliers.
- Consumers' willingness to pay.
- Valorization of local and organic products.

Processors, restaurants, and retailers

- Suppliers (farmers) get a fair price.
- Valorization of local and organic products.
- Lack of customers (competition with big distribution).

Consumers

- A fair price for farmers.
- An affordable purchase price.
- Indication of the origin of the product (information on the producer, locality, sustainability).
- Ability to buy directly from the producer.

Read aloud to participants:

You are now participating in the final part of the choice study. During the process we kindlyask you not to speak to other participants. If you have a question, please ask it in private and we will gladly answer it. It is very important that you follow this rule.

In Part IV you will make 10 decisions. All the choice cards contain three columns. Each column below represents three hypothetical scenarios for prices adopted to produce the product. Each set of options varies in terms of prices offered by the producer, the wholesaler, and the retailer. For each choice card, please indicate which scenario (A, B, orC) you would be likely to choose if offered to you. Please tick one box only. You are obligedto answer to all the questions.

Please raise your hand if you have any questions.

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APPENDIX C (CHOICE CARDS)

SPAIN – TOMATO

Please mark down your preferred alternative between A, B, or C (*Only <u>one option</u> isallowed*).

1. Which of the following alternatives would you choose? (Assume that the production cost for tomatoes equals 0,70€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,81	0,74	0,95
Wholesaler Price (P_W)	1,09	0,85	0,99
Retailer Price (P_R)	1,47	0,89	1,14

2. Which of the following alternatives would you choose? (Assume that the production cost for tomatoes equals 0,70€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,74	0,81	0,95
Wholesaler Price (P_W)	0,77	0,93	1,28
Retailer Price (P_R)	0,81	1,25	1,47

3. Which of the following alternatives would you choose? (Assume that the production cost for tomatoes equals 0,70€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,74	0,95	0,74
Wholesaler Price (P_W)	0,85	0,99	0,99
Retailer Price (P_R)	0,89	1,14	1,34

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4. Which of the following alternatives would you choose? (Assume that the production cost for tomatoes equals 0,70€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,74	0,74	0,95
Wholesaler Price (P_W)	0,85	0,77	1,28
Retailer Price (P_R)	0,89	1,04	1,47

5. Which of the following alternatives would you choose? (Assume that the production cost for tomatoes equals 0,70€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,81	0,81	0,74
Wholesaler Price (P_W)	0,93	1,09	0,77
Retailer Price (P_R)	1,06	1,14	1,04

6. Which of the following alternatives would you choose? (Assume that the production cost for tomatoes equals 0,70€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,81	0,95	0,74
Wholesaler Price (P_W)	0,85	1,09	0,99
Retailer Price (P_R)	0,97	1,47	1,04

7. Which of the following alternatives would you choose? (Assume that the production cost for tomatoes equals 0,70€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,95	0,74	0,81
Wholesaler Price (P_W)	1,28	0,77	0,93
Retailer Price (P_R)	1,72	0,81	0,97

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8. Which of the following alternatives would you choose? (Assume that the production cost for tomatoes equals 0,70€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,95	0,74	0,81
Wholesaler Price (P_W)	1,28	0,85	0,85
Retailer Price (P_R)	1,47	0,89	1,14

9. Which of the following alternatives would you choose? (Assume that the production cost for tomatoes equals 0,70€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,74	0,81	0,95
Wholesaler Price (P_W)	0,85	0,93	1,09
Retailer Price (P_R)	1,14	1,06	1,14

10. Which of the following alternatives would you choose? (Assume that the production cost for tomatoes equals 0,70€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,81	0,95	0,74
Wholesaler Price (P_W)	1,09	0,99	0,77
Retailer Price (P_R)	1,14	1,34	0,89

11. Which of the following alternatives would you choose? (Assume that the production cost for tomatoes equals 0,70€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,74	0,95	0,81
Wholesaler Price (P_W)	0,85	1,09	0,93
Retailer Price (P_R)	1,14	1,14	1,06

12. Which of the following alternatives would you choose? (Assume that the production cost for tomatoes equals 0,70€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,95	0,74	0,81
Wholesaler Price (P_W)	1,09	0,77	1,09
Retailer Price (P_R)	1,47	0,89	1,14

13. Which of the following alternatives would you choose? (Assume that the production cost for tomatoes equals 0,70€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,74	0,95	0,81
Wholesaler Price (P_W)	0,77	1,28	0,93
Retailer Price (P_R)	0,89	1,47	0,97

14. Which of the following alternatives would you choose? (Assume that the production cost for tomatoes equals 0,70€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,95	0,81	0,74
Wholesaler Price (P_W)	0,99	0,93	0,99
Retailer Price (P_R)	1,14	0,97	1,34

15. Which of the following alternatives would you choose? (Assume that the production cost for tomatoes equals 0,70€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,81	0,81	0,81
Wholesaler Price (P_W)	0,85	1,09	0,85
Retailer Price (P_R)	0,89	1,25	1,14

16. Which of the following alternatives would you choose? (Assume that the production cost for tomatoes equals 0,70€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,95	0,81	0,74
Wholesaler Price (P_W)	1,09	1,09	0,77
Retailer Price (P_R)	1,47	1,25	0,81

17. Which of the following alternatives would you choose? (Assume that the production cost for tomatoes equals 0,70€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,74	0,74	0,81
Wholesaler Price (P_W)	0,77	0,99	0,93
Retailer Price (P_R)	0,81	1,34	1,06

18. Which of the following alternatives would you choose? (Assume that the production cost for tomatoes equals 0,70€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,81	0,74	0,95
Wholesaler Price (P_W)	0,85	0,99	0,99
Retailer Price (P_R)	0,97	1,14	1,14

19. Which of the following alternatives would you choose? (Assume that the production cost for tomatoes equals 0,70€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,74	0,81	0,95
Wholesaler Price (P_W)	0,99	0,74	1,09
Retailer Price (P_R)	1,14	0,99	1,14

20. Which of the following alternatives would you choose? (Assume that the production cost for tomatoes equals 0,70€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,81	0,95	0,74
Wholesaler Price (P_W)	1,09	0,99	0,85
Retailer Price (P_R)	1,14	1,04	1,14

SPAIN – FIGS

1. Which of the following alternatives would you choose? (Assume that the production cost for figs equals 1,20€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	1,38 (115% of cost)	1,26 (105% of cost)	1,62 (135% of cost)
Wholesaler Price (P_W)	1,86 (155% of cost)	1,45 (120,9% of cost)	1,70 (141,7% of cost)
Retailer Price (P_R)	2,52 (210% of cost)	1,52 (126,7% of cost)	1,96 (163,4% of cost)

2. Which of the following alternatives would you choose? (Assume that the production cost for figs equals 1,20€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	1,26 (105% of cost)	1,38 (115% of cost)	1,62 (135% of cost)
Wholesaler Price (P_W)	1,32 (111% of cost)	1,59 (132,5% of cost)	2,19 (182,5% of cost)
Retailer Price (P_R)	1,39 (115,8% of cost)	2,14 (178,3% of cost)	2,52 (210% of cost)

3. Which of the following alternatives would you choose? (Assume that the production cost for figs equals 1,20€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	1,26 (105% of cost)	1,62 (135% of cost)	1,26 (105% of cost)
Wholesaler Price (P_W)	1,45 (120,9% of cost)	1,70 (141,7% of cost)	1,70 (141,7% of cost)
Retailer Price (P_R)	1,52 (126,7% of cost)	1,96 (163,4% of cost)	2,30 (191,7% of cost)

4. Which of the following alternatives would you choose? (Assume that the production cost for figs equals 1,20€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	1,26 (105% of cost)	1,26 (105% of cost)	1,62 (135% of cost)
Wholesaler Price (P_W)	1,45 (120,9% of cost)	1,32 (111% of cost)	2,19 (182,5% of cost)
Retailer Price (P_R)	1,52 (126,7% of cost)	1,79 (149,1% of cost)	2,52 (210% of cost)

5. Which of the following alternatives would you choose? (Assume that the production cost for figs equals 1,20€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	1,38 (115% of cost)	1,38 (115% of cost)	1,26 (105% of cost)
Wholesaler Price (P_W)	1,59 (132,5% of cost)	1,86 (155% of cost)	1,32 (111% of cost)
Retailer Price (P_R)	1,83 (152,5% of cost)	1,96 (163,4% of cost)	1,79 (149,1% of cost)

6. Which of the following alternatives would you choose? (Assume that the production cost for figs equals 1,20€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	1,38 (115% of cost)	1,62 (135% of cost)	1,26 (105% of cost)
Wholesaler Price (P_W)	1,45 (120,9% of cost)	1,86 (155% of cost)	1,70 (141,7% of cost)
Retailer Price (P_R)	1,67 (139,2% of cost)	2,52 (210% of cost)	1,79 (149,1% of cost)

7. Which of the following alternatives would you choose? (Assume that the production cost for figs equals 1,20€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	1,62 (135% of cost)	1,26 (105% of cost)	1,38 (115% of cost)
Wholesaler Price (P_W)	2,19 (182,5% of cost)	1,32 (111% of cost)	1,59 (132,5% of cost)
Retailer Price (P_R)	2,95 (145,8% of cost)	1,39 (115,8% of cost)	1,67 (139,2% of cost)

8. Which of the following alternatives would you choose? (Assume that the production cost for figs equals 1,20€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	1,62 (135% of cost)	1,26 (105% of cost)	1,38 (115% of cost)
Wholesaler Price (P_W)	2,19 (182,5% of cost)	1,45 (120,9% of cost)	1,45 (120,9% of cost)
Retailer Price (P_R)	2,52 (210% of cost)	1,52 (126,7% of cost)	1,96 (163,4% of cost)

9. Which of the following alternatives would you choose? (Assume that the production cost for figs equals 1,20€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	1,26 (105% of cost)	1,38 (115% of cost)	1,62 (135% of cost)
Wholesaler Price (P_W)	1,45 (120,9% of cost)	1,59 (132,5% of cost)	1,86 (155% of cost)
Retailer Price (P_R)	1,96 (163,4% of cost)	1,83 (152,5% of cost)	1,96 (163,4% of cost)

10. Which of the following alternatives would you choose? (Assume that the production cost for figs equals 1,20€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	1,38 (115% of cost)	1,62 (135% of cost)	1,26 (105% of cost)
Wholesaler Price (P_W)	1,86 (155% of cost)	1,70 (141,7% of cost)	1,32 (111% of cost)
Retailer Price (P_R)	1,96 (163,4% of cost)	2,30 (191,7% of cost)	1,52 (126,7% of cost)

11. Which of the following alternatives would you choose? (Assume that the production cost for figs equals 1,20€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	1,26 (105% of cost)	1,62 (135% of cost)	1,38 (115% of cost)
Wholesaler Price (P_W)	1,45 (120,9% of cost)	1,86 (155% of cost)	1,59 (132,5% of cost)
Retailer Price (P_R)	1,96 (163,4% of cost)	1,96 (163,4% of cost)	1,83 (152,5% of cost)

The LAB4SUPPLY project has received funding from the European Union's PRIMA Horizon 2020 research and innovation programme.

12. Which of the following alternatives would you choose? (Assume that the production cost for figs equals 1,20€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	1,62 (135% of cost)	1,26 (105% of cost)	1,38 (115% of cost)
Wholesaler Price (P_W)	1,86 (155% of cost)	1,32 (111% of cost)	1,86 (155% of cost)
Retailer Price (P_R)	2,52 (210% of cost)	1,52 (126,7% of cost)	1,96 (163,4% of cost)

13. Which of the following alternatives would you choose? (Assume that the production cost for figs equals 1,20€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	1,26 (105% of cost)	1,62 (135% of cost)	1,38 (115% of cost)
Wholesaler Price (P_W)	1,32 (111% of cost)	2,19 (182,5% of cost)	1,59 (132,5% of cost)
Retailer Price (P_R)	1,52 (126,7% of cost)	2,52 (210% of cost)	1,67 (139,2% of cost)

14. Which of the following alternatives would you choose? (Assume that the production cost for figs equals 1,20€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	1,62 (135% of cost)	1,38 (115% of cost)	1,26 (105% of cost)
Wholesaler Price (P_W)	1,70 (141,7% of cost)	1,59 (132,5% of cost)	1,70 (141,7% of cost)
Retailer Price (P_R)	1,96 (163,4% of cost)	1,67 (139,2% of cost)	2,30 (191,7% of cost)

15. Which of the following alternatives would you choose? (Assume that the production cost for figs equals 1,20€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	1,38 (115% of cost)	1,38 (115% of cost)	1,38 (115% of cost)
Wholesaler Price (P_W)	1,45 (120,9% of cost)	1,86 (155% of cost)	1,45 (120,9% of cost)
Retailer Price (P_R)	1,52 (126,7% of cost)	2,14 (178,3% of cost)	1,96 (163,4% of cost)

The LAB4SUPPLY project has received funding from the European Union's PRIMA Horizon 2020 research and innovation programme.

16. Which of the following alternatives would you choose? (Assume that the production cost for figs equals 1,20€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	1,62 (135% of cost)	1,38 (115% of cost)	1,26 (105% of cost)
Wholesaler Price (P_W)	1,86 (155% of cost)	1,86 (155% of cost)	1,32 (111% of cost)
Retailer Price (P_R)	2,52 (210% of cost)	2,14 (178,3% of cost)	1,39 (115,8% of cost)

17. Which of the following alternatives would you choose? (Assume that the production cost for figs equals 1,20€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	1,62 (135% of cost)	1,26 (105% of cost)	1,38 (115% of cost)
Wholesaler Price (P_W)	1,70 (141,7% of cost)	1,70 (141,7% of cost)	1,59 (132,5% of cost)
Retailer Price (P_R)	1,79 (149,1% of cost)	2,30 (191,7% of cost)	1,83 (152,5% of cost)

18. Which of the following alternatives would you choose? (Assume that the production cost for figs equals 1,20€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	1,38 (115% of cost)	1,26 (105% of cost)	1,62 (135% of cost)
Wholesaler Price (P_W)	1,45 (120,9% of cost)	1,70 (141,7% of cost)	1,70 (141,7% of cost)
Retailer Price (P_R)	1,67 (139,2% of cost)	1,96 (163,4% of cost)	1,96 (163,4% of cost)

19. Which of the following alternatives would you choose? (Assume that the production cost for figs equals 1,20€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	1,26 (105% of cost)	1,38 (115% of cost)	1,62 (135% of cost)
Wholesaler Price (P_W)	1,70 (141,7% of cost)	1,26 (105% of cost)	1,86 (155% of cost)
Retailer Price (P_R)	1,96 (163,4% of cost)	1,70 (141,7% of cost)	1,96 (163,4% of cost)

The LAB4SUPPLY project has received funding from the European Union's PRIMA Horizon 2020 research and innovation programme.

20. Which of the following alternatives would you choose? (Assume that the production cost for figs equals 1,20€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	1,38 (115% of cost)	1,62 (135% of cost)	1,26 (105% of cost)
Wholesaler Price (P_W)	1,86 (155% of cost)	1,70 (141,7% of cost)	1,45 (120,9% of cost)
Retailer Price (P_R)	1,96 (163,4% of cost)	1,79 (149,1% of cost)	1,96 (163,4% of cost)

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FRANCE – FIGS

Please mark down your preferred alternative between A, B, or C (*Only <u>one option</u> isallowed*).

1. Which of the following alternatives would you choose? (Assume that the production cost for figs equal 0,27€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,31 (+15% of cost)	0,28 (+5% of cost)	0,36 (+35% of cost)
Wholesaler Price (P_W)	0,42 (+55,6% of cost)	0,33 (+22,3% of cost)	0,38 (+40,8% of cost)
Retailer Price (P_R)	0,57 (+112% of cost)	0,34 (+26% of cost)	0,44 (+63% of cost)

1. Which of the following alternatives would you choose? (Assume that the production cost for figs equal 0,27€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,28 (+5% of cost)	0,31 (+15% of cost)	0,36 (+35% of cost)
Wholesaler Price (P_W)	0,30 (+11,2% of cost)	0,36 (+35% of cost)	0,49 (+81,5% of cost)
Retailer Price (P_R)	0,31 (+15% of cost)	0,48 (+77,8% of cost)	0,57 (+112% of cost)

2. Which of the following alternatives would you choose? (Assume that the production cost for figs equal 0,27€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,28 (+5% of cost)	0,36 (+35% of cost)	0,28 (+5% of cost)
Wholesaler Price (P_W)	0,33 (+22,3% of cost)	0,38 (+40,8% of cost)	0,38 (+40,8% of cost)
Retailer Price (P_R)	0,34 (+26% of cost)	0,44 (+63% of cost)	0,52 (+92,6% of cost)

3. Which of the following alternatives would you choose? (Assume that the production cost for figs equal 0,27€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,28 (+5% of cost)	0,28 (+5% of cost)	0,36 (+35% of cost)
Wholesaler Price (P_W)	0,33 (+22,3% of cost)	0,30 (+11,2% of cost)	0,49 (+81,5% of cost)
Retailer Price (P_R)	0,34 (+26% of cost)	0,40 (+48,2% of cost)	0,57 (+112% of cost)

4. Which of the following alternatives would you choose? (Assume that the production cost for figs equal 0,27€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,31 (+15% of cost)	0,31 (+15% of cost)	0,28 (+5% of cost)
Wholesaler Price (P_W)	0,36 (+35% of cost)	0,42 (+55,6% of cost)	0,30 (+11,2% of cost)
Retailer Price (P_R)	0,41 (+55,5% of cost)	0,44 (+63% of cost)	0,40 (+48,2% of cost)

5. Which of the following alternatives would you choose? (Assume that the production cost for figs equal 0,27€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,31 (+15% of cost)	0,36 (+35% of cost)	0,28 (+5% of cost)
Wholesaler Price (P_W)	0,33 (+22,3% of cost)	0,42 (+55,6% of cost)	0,38 (+40,8% of cost)
Retailer Price (P_R)	0,37 (+40,7% of cost)	0,57 (+112% of cost)	0,40 (+48,2% of cost)

6. Which of the following alternatives would you choose? (Assume that the production cost for figs equal 0,27€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,36 (+35% of cost)	0,28 (+5% of cost)	0,31 (+15% of cost)
Wholesaler Price (P_W)	0,49 (+81,5% of cost)	0,30 (+11,2% of cost)	0,36 (+35% of cost)
Retailer Price (P_R)	0,66 (144,5% of cost)	0,31 (+15% of cost)	0,37 (+37,1% of cost)

7. Which of the following alternatives would you choose? (Assume that the production cost for figs equal 0,27€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,36 (+35% of cost)	0,28 (+5% of cost)	0,31 (+15% of cost)
Wholesaler Price (P_W)	0,49 (+81,5% of cost)	0,33 (+22,3% of cost)	0,33 (+22,3% of cost)
Retailer Price (P_R)	0,57 (+112% of cost)	0,34 (+26% of cost)	0,44 (+63% of cost)

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8. Which of the following alternatives would you choose? (Assume that the production cost for figs equal 0,27€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,28 (+5% of cost)	0,31 (+15% of cost)	0,36 (+35% of cost)
Wholesaler Price (P_W)	0,33 (+22,3% of cost)	0,36 (+35% of cost)	0,42 (+55,6% of cost)
Retailer Price (P_R)	0,44 (+63% of cost)	0,41 (+55,5% of cost)	0,44 (+63% of cost)

9. Which of the following alternatives would you choose? (Assume that the production cost for figs equal 0,27€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,31 (+15% of cost)	0,36 (+35% of cost)	0,28 (+5% of cost)
Wholesaler Price (P_W)	0,42 (+55,6% of cost)	0,38 (+40,8% of cost)	0,30 (+11,2% of cost)
Retailer Price (P_R)	0,44 (+63% of cost)	0,52 (+92,6% of cost)	0,34 (+26% of cost)

10. Which of the following alternatives would you choose? (Assume that the production cost for figs equal 0,27€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,28 (+5% of cost)	0,36 (+35% of cost)	0,31 (+15% of cost)
Wholesaler Price (P_W)	0,33 (+22,3% of cost)	0,42 (+55,6% of cost)	0,36 (+35% of cost)
Retailer Price (P_R)	0,44 (+63% of cost)	0,44 (+63% of cost)	0,41 (+55,5% of cost)

11. Which of the following alternatives would you choose? (Assume that the production cost for figs equal 0,27€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,36 (+35% of cost)	0,28 (+5% of cost)	0,31 (+15% of cost)
Wholesaler Price (P_W)	0,42 (+55,6% of cost)	0,30 (+11,2% of cost)	0,42 (+55,6% of cost)
Retailer Price (P_R)	0,57 (+112% of cost)	0,34 (+26% of cost)	0,44 (+63% of cost)

12. Which of the following alternatives would you choose? (Assume that the production cost for figs equal 0,27€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,28 (+5% of cost)	0,36 (+35% of cost)	0,31 (+15% of cost)
Wholesaler Price (P_W)	0,30 (+11,2% of cost)	0,49 (+81,5% of cost)	0,36 (+35% of cost)
Retailer Price (P_R)	0,34 (+26% of cost)	0,57 (+112% of cost)	0,37 (+37,1% of cost)

13. Which of the following alternatives would you choose? (Assume that the production cost for figs equal 0,27€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,36 (+35% of cost)	0,31 (+15% of cost)	0,28 (+5% of cost)
Wholesaler Price (P_W)	0,38 (+40,8% of cost)	0,36 (+35% of cost)	0,38 (+40,8% of cost)
Retailer Price (P_R)	0,44 (+63% of cost)	0,37 (+37,1% of cost)	0,52 (+92,6% of cost)

14. Which of the following alternatives would you choose? (Assume that the production cost for figs equal 0,27€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,31 (+15% of cost)	0,31 (+15% of cost)	0,31 (+15% of cost)
Wholesaler Price (P_W)	0,33 (+22,3% of cost)	0,42 (+55,6% of cost)	0,33 (+22,3% of cost)
Retailer Price (P_R)	0,34 (+26% of cost)	0,48 (+77,8% of cost)	0,44 (+63% of cost)

15. Which of the following alternatives would you choose? (Assume that the production cost for figs equal 0,27€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,36 (+35% of cost)	0,31 (+15% of cost)	0,28 (+5% of cost)
Wholesaler Price (P_W)	0,42 (+55,6% of cost)	0,42 (+55,6% of cost)	0,30 (+11,2% of cost)
Retailer Price (P_R)	0,57 (+112% of cost)	0,48 (+77,8% of cost)	0,31 (+15% of cost)

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16. Which of the following alternatives would you choose? (Assume that the production cost for figs equal 0,27€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,36 (+35% of cost)	0,28 (+5% of cost)	0,31 (+15% of cost)
Wholesaler Price (P_W)	0,38 (+40,8% of cost)	0,38 (+40,8% of cost)	0,36 (+35% of cost)
Retailer Price (P_R)	0,40 (+48,2% of cost)	0,52 (+92,6% of cost)	0,41 (+55,5% of cost)

17. Which of the following alternatives would you choose? (Assume that the production cost for figs equal 0,27€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,31 (+15% of cost)	0,28 (+5% of cost)	0,36 (+35% of cost)
Wholesaler Price (P_W)	0,33 (+22,3% of cost)	0,38 (+40,8% of cost)	0,38 (+40,8% of cost)
Retailer Price (P_R)	0,37 (+37,1% of cost)	0,44 (+63% of cost)	0,44 (+63% of cost)

18. Which of the following alternatives would you choose? (Assume that the production cost for figs equal 0,27€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,28 (+5% of cost)	0,31 (+15% of cost)	0,36 (+35% of cost)
Wholesaler Price (P_W)	0,38 (+40,8% of cost)	0,28 (+5% of cost)	0,42 (+55,6% of cost)
Retailer Price (P_R)	0,44 (+63% of cost)	0,38 (+40,8% of cost)	0,44 (+63% of cost)

19. Which of the following alternatives would you choose? (Assume that the production cost for figs equal 0,27€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,31 (+15% of cost)	0,36 (+35% of cost)	0,28 (+5% of cost)
Wholesaler Price (P_W)	0,42 (+55,6% of cost)	0,38 (+40,8% of cost)	0,33 (+22,3% of cost)
Retailer Price (P_R)	0,44 (+63% of cost)	0,40 (+48,2% of cost)	0,44 (+63% of cost)

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20. Which of the following alternatives would you choose? (Assume that the production cost for figs equal 0,27€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,31 (+15% of cost)	0,36 (+35% of cost)	0,28 (+5% of cost)
Wholesaler Price (P_W)	0,42 (+55,6% of cost)	0,38 (+40,8% of cost)	0,33 (+22,3% of cost)
Retailer Price (P_R)	0,44 (+63% of cost)	0,40 (+48,2% of cost)	0,44 (+63% of cost)

The LAB4SUPPLY project has received funding from the European Union's PRIMA Horizon 2020 research and innovation programme.

FRANCE – CHESTNUTS

Please mark down your preferred alternative between A, B, or C (*Only <u>one option</u> is allowed*).

1. Which of the following alternatives would you choose? (Assume that the production cost for chestnuts equal 0,2€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,23 (+15% of cost)	0,21 (+5% of cost)	0,27 (+35% of cost)
Wholesaler Price (P_W)	0,31 (+55% of cost)	0,24 (+20% of cost)	0,28 (+40% of cost)
Retailer Price (P_R)	0,42 (+110% of cost)	0,25 (+25% of cost)	0,33 (+65% of cost)

2. Which of the following alternatives would you choose? (Assume that the production cost for chestnuts equal 0,2€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,21 (+5% of cost)	0,23 (+15% of cost)	0,27 (+35% of cost)
Wholesaler Price (P_W)	0,22 (+10% of cost)	0,26 (+30% of cost)	0,36 (+80% of cost)
Retailer Price (P_R)	0,23 (+15% of cost)	0,36 (+80% of cost)	0,42 (+110% of cost)

3. Which of the following alternatives would you choose? (Assume that the production cost for chestnuts equal 0,2€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,21 (+5% of cost)	0,27 (+35% of cost)	0,21 (+5% of cost)
Wholesaler Price (P_W)	0,24 (+20% of cost)	0,28 (+40% of cost)	0,28 (+40% of cost)
Retailer Price (P_R)	0,25 (+25% of cost)	0,33 (+65% of cost)	0,38 (+90% of cost)

4. Which of the following alternatives would you choose? (Assume that the production cost for chestnuts equal 0,2€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,21 (+5% of cost)	0,21 (+5% of cost)	0,27 (+35% of cost)
Wholesaler Price (P_W)	0,24 (+20% of cost)	0,22 (+10% of cost)	0,36 (+80% of cost)
Retailer Price (P_R)	0,25 (+25% of cost)	0,30 (+50% of cost)	0,42 (+110% of cost)

The LAB4SUPPLY project has received funding from the European Union's PRIMA Horizon 2020 research and innovation programme.

5. Which of the following alternatives would you choose? (Assume that the production cost for chestnuts equal 0,2€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,23 (+15% of cost)	0,23 (+15% of cost)	0,21 (+5% of cost)
Wholesaler Price (P_W)	0,26 (+30% of cost)	0,31 (+55% of cost)	0,22 (+10% of cost)
Retailer Price (P_R)	0,30 (+50% of cost)	0,33 (+65% of cost)	0,30 (+50% of cost)

6. Which of the following alternatives would you choose? (Assume that the production cost for chestnuts equal 0,2€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,23 (+15% of cost)	0,27 (+35% of cost)	0,21 (+5% of cost)
Wholesaler Price (P_W)	0,24 (+20% of cost)	0,31 (+55% of cost)	0,28 (+40% of cost)
Retailer Price (P_R)	0,28 (+40% of cost)	0,42 (+110% of cost)	0,30 (+50% of cost)

7. Which of the following alternatives would you choose? (Assume that the production cost for chestnuts equal 0,2€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,27 (+35% of cost)	0,21 (+5% of cost)	0,23 (+15% of cost)
Wholesaler Price (P_W)	0,36 (+80% of cost)	0,22 (+10% of cost)	0,26 (+30% of cost)
Retailer Price (P_R)	0,49 (+145 of cost)	0,23 (+15% of cost)	0,28 (+40% of cost)

8. Which of the following alternatives would you choose? (Assume that the production cost for chestnuts equal 0,2€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,27 (+35% of cost)	0,21 (+5% of cost)	0,23 (+15% of cost)
Wholesaler Price (P_W)	0,36 (+80% of cost)	0,22 (+10% of cost)	0,26 (+30% of cost)
Retailer Price (P_R)	0,49 (+145 of cost)	0,23 (+15% of cost)	0,28 (+40% of cost)

9. Which of the following alternatives would you choose? (Assume that the production cost for chestnuts equal 0,2€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,27 (+35% of cost)	0,21 (+5% of cost)	0,23 (+15% of cost)
Wholesaler Price (P_W)	0,36 (+80% of cost)	0,24 (+20% of cost)	0,24 (+20% of cost)
Retailer Price (P_R)	0,42 (+110% of cost)	0,25 (+25% of cost)	0,33 (+65% of cost)

10. Which of the following alternatives would you choose? (Assume that the production cost for chestnuts equal 0,2€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,21 (+5% of cost)	0,23 (+15% of cost)	0,27 (+35% of cost)
Wholesaler Price (P_W)	0,24 (+20% of cost)	0,26 (+30% of cost)	0,31 (+55% of cost)
Retailer Price (P_R)	0,33 (+65% of cost)	0,30 (+50% of cost)	0,33 (+65% of cost)

11. Which of the following alternatives would you choose? (Assume that the production cost for chestnuts equal 0,2€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,23 (+15% of cost)	0,27 (+35% of cost)	0,21 (+5% of cost)
Wholesaler Price (P_W)	0,31 (+55% of cost)	0,28 (+40% of cost)	0,22 (+10% of cost)
Retailer Price (P_R)	0,33 (+65% of cost)	0,38 (+90% of cost)	0,25 (+25% of cost)

12. Which of the following alternatives would you choose? (Assume that the production cost for chestnuts equal 0,2€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,21 (+5% of cost)	0,27 (+35% of cost)	0,23 (+15% of cost)
Wholesaler Price (P_W)	0,24 (+20% of cost)	0,31 (+55% of cost)	0,26 (+30% of cost)
Retailer Price (P_R)	0,33 (+65% of cost)	0,33 (+65% of cost)	0,30 (+50% of cost)

The LAB4SUPPLY project has received funding from the European Union's PRIMA Horizon 2020 research and innovation programme.

13. Which of the following alternatives would you choose? (Assume that the production cost for chestnuts equal 0,2€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,27 (+35% of cost)	0,21 (+5% of cost)	0,23 (+15% of cost)
Wholesaler Price (P_W)	0,31 (+55% of cost)	0,22 (+10% of cost)	0,31 (+55% of cost)
Retailer Price (P_R)	0,42 (+110% of cost)	0,25 (+25% of cost)	0,33 (+65% of cost)

14. Which of the following alternatives would you choose? (Assume that the production cost for chestnuts equal 0,2€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,21 (+5% of cost)	0,27 (+35% of cost)	0,23 (+15% of cost)
Wholesaler Price (P_W)	0,22 (+10% of cost)	0,36 (+80% of cost)	0,26 (+30% of cost)
Retailer Price (P_R)	0,25 (+25% of cost)	0,42 (+110% of cost)	0,28 (+40% of cost)

15. Which of the following alternatives would you choose? (Assume that the production cost for chestnuts equal 0,2€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,27 (+35% of cost)	0,23 (+15% of cost)	0,21 (+5% of cost)
Wholesaler Price (P_W)	0,28 (+40% of cost)	0,26 (+30% of cost)	0,28 (+40% of cost)
Retailer Price (P_R)	0,33 (+65% of cost)	0,28 (+40% of cost)	0,38 (+90% of cost)

16. Which of the following alternatives would you choose? (Assume that the production cost for chestnuts equal 0,2€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,23 (+15% of cost)	0,23 (+15% of cost)	0,23 (+15% of cost)
Wholesaler Price (P_W)	0,24 (+20% of cost)	0,31 (+55% of cost)	0,24 (+20% of cost)
Retailer Price (P_R)	0,25 (+25% of cost)	0,36 (+80% of cost)	0,33 (+65% of cost)

17. Which of the following alternatives would you choose? (Assume that the production cost for chestnuts equal 0,2€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,27 (+35% of cost)	0,23 (+15% of cost)	0,21 (+5% of cost)
Wholesaler Price (P_W)	0,31 (+55% of cost)	0,31 (+55% of cost)	0,22 (+10% of cost)
Retailer Price (P_R)	0,42 (+110% of cost)	0,36 (+80% of cost)	0,23 (+15% of cost)

18. Which of the following alternatives would you choose? (Assume that the production cost for chestnuts equal 0,2€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,27 (+35% of cost)	0,21 (+5% of cost)	0,23 (+15% of cost)
Wholesaler Price (P_W)	0,28 (+40% of cost)	0,28 (+40% of cost)	0,26 (+30% of cost)
Retailer Price (P_R)	0,30 (+50% of cost)	0,38 (+90% of cost)	0,30 (+50% of cost)

19. Which of the following alternatives would you choose? (Assume that the production cost for chestnuts equal 0,2€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,23 (+15% of cost)	0,21 (+5% of cost)	0,27 (+35% of cost)
Wholesaler Price (P_W)	0,24 (+20% of cost)	0,28 (+40% of cost)	0,28 (+40% of cost)
Retailer Price (P_R)	0,28 (+40% of cost)	0,33 (+65% of cost)	0,33 (+65% of cost)

20. Which of the following alternatives would you choose? (Assume that the production cost for chestnuts equal 0,2€/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	0,21 (+5% of cost)	0,23 (+15% of cost)	0,27 (+35% of cost)
Wholesaler Price (P_W)	0,28 (+40% of cost)	0,21 (+5% of cost)	0,31 (+55% of cost)
Retailer Price (P_R)	0,33 (+65% of cost)	0,28 (+40% of cost)	0,33 (+65% of cost)

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MOROCCO – CAROB

Please mark down your preferred alternative between A, B, or C (*Only <u>one option</u> isallowed*).

1. Which of the following alternatives would you choose? (Assume that the production cost for carobs equal 5,5 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	6,33 (+15% of cost)	5,78 (+5% of cost)	7,43 (+35% of cost)
Wholesaler Price (P_W)	8,54 (+55,3% of cost)	6,64 (+20,8% of cost)	7,80 (41,9% of cost)
Retailer Price (P_R)	11,53 (+109,7% of cost)	6,97 (+26,8% of cost)	8,97 (+63% of cost)

2. Which of the following alternatives would you choose? (Assume that the production cost for carobs equal 5,5 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	5,78 (+5% of cost)	6,33 (+15% of cost)	7,43 (+35% of cost)
Wholesaler Price (P_W)	6,06 (+10,2% of cost)	7,27 (+32,2% of cost)	10,02 (+82,2% of cost)
Retailer Price (P_R)	6,37 (+15,3% of cost)	9,82 (+78,6% of cost)	11,53 (+109,7% of cost)

3. Which of the following alternatives would you choose? (Assume that the production cost for carobs equal 5,5 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	5,78 (+5% of cost)	7,43 (+35% of cost)	5,78 (+5% of cost)
Wholesaler Price (P_W)	6,64 (+20,8% of cost)	7,80 (41,9% of cost)	7,80 (41,9% of cost)
Retailer Price (P_R)	6,97 (+26,8% of cost)	8,97 (+63% of cost)	10,52 (+91,3% of cost)

4. Which of the following alternatives would you choose? (Assume that the production cost for carobs equal 5,5 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	5,78 (+5% of cost)	5,78 (+5% of cost)	7,43 (+35% of cost)
Wholesaler Price (P_W)	6,64 (+20,8% of cost)	6,06 (+10,2% of cost)	10,02 (+82,2% of cost)
Retailer Price (P_R)	6,97 (+26,8% of cost)	8,19 (+48,9% of cost)	11,53 (+109,7% of cost)

5. Which of the following alternatives would you choose? (Assume that the production cost for carobs equal 5,5 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	6,33 (+15% of cost)	6,33 (+15% of cost)	5,78 (+5% of cost)
Wholesaler Price (P_W)	7,27 (+32,2% of cost)	8,54 (+55,3% of cost)	6,06 (+10,2% of cost)
Retailer Price (P_R)	8,36 (+52% of cost)	8,97 (+63% of cost)	8,19 (+48,9% of cost)

6. Which of the following alternatives would you choose? (Assume that the production cost for carobs equal 5,5 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	6,33 (+15% of cost)	7,43 (+35% of cost)	5,78 (+5% of cost)
Wholesaler Price (P_W)	6,64 (+20,8% of cost)	8,54 (+55,3% of cost)	7,80 (41,9% of cost)
Retailer Price (P_R)	7,64 (+38,9% of cost)	11,53 (+109,7% of cost)	8,19 (+48,9% of cost)

7. Which of the following alternatives would you choose? (Assume that the production cost for carobs equal 5,5 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	7,43 (+35% of cost)	5,78 (+5% of cost)	6,33 (+15% of cost)
Wholesaler Price (P_W)	10,02 (+82,2% of cost)	6,06 (+10,2% of cost)	7,27 (+32,2% of cost)
Retailer Price (P_R)	13,53 (+146% of cost)	6,37 (+15,3% of cost)	7,64 (+38,9% of cost)

8. Which of the following alternatives would you choose? (Assume that the production cost for carobs equal 5,5 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	7,43 (+35% of cost)	5,78 (+5% of cost)	6,33 (+15% of cost)
Wholesaler Price (P_W)	10,02 (+82,2% of cost)	6,64 (+20,8% of cost)	6,64 (+20,8% of cost)
Retailer Price (P_R)	11,53 (+109,7% of cost)	6,97 (+26,8% of cost)	8,97 (+63% of cost)

9. Which of the following alternatives would you choose? (Assume that the production cost for carobs equal 5,5 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	5,78 (+5% of cost)	6,33 (+15% of cost)	7,43 (+35% of cost)
Wholesaler Price (P_W)	6,64 (+20,8% of cost)	7,27 (+32,2% of cost)	8,54 (+55,3% of cost)
Retailer Price (P_R)	8,97 (+63% of cost)	8,36 (+52% of cost)	8,97 (+63% of cost)

10. Which of the following alternatives would you choose? (Assume that the production cost for carobs equal 5,5 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	6,33 (+15% of cost)	7,43 (+35% of cost)	5,78 (+5% of cost)
Wholesaler Price (P_W)	8,54 (+55,3% of cost)	7,80 (41,9% of cost)	6,06 (+10,2% of cost)
Retailer Price (P_R)	8,97 (+63% of cost)	10,52 (+91,3% of cost)	6,97 (+26,8% of cost)

11. Which of the following alternatives would you choose? (Assume that the production cost for carobs equal 5,5 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	5,78 (+5% of cost)	7,43 (+35% of cost)	6,33 (+15% of cost)
Wholesaler Price (P_W)	6,64 (+20,8% of cost)	8,54 (+55,3% of cost)	7,27 (+32,2% of cost)
Retailer Price (P_R)	8,97 (+63% of cost)	8,97 (+63% of cost)	8,36 (+52% of cost)

12. Which of the following alternatives would you choose? (Assume that the production cost for carobs equal 5,5 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	7,43 (+35% of cost)	5,78 (+5% of cost)	6,33 (+15% of cost)
Wholesaler Price (P_W)	8,54 (+55,3% of cost)	6,06 (+10,2% of cost)	8,54 (+55,3% of cost)
Retailer Price (P_R)	11,53 (+109,7% of cost)	6,97 (+26,8% of cost)	8,97 (+63% of cost)

13. Which of the following alternatives would you choose? (Assume that the production cost for carobs equal 5,5 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	5,78 (+5% of cost)	7,43 (+35% of cost)	6,33 (+15% of cost)
Wholesaler Price (P_W)	6,06 (+10,2% of cost)	10,02 (+82,2% of cost)	7,27 (+32,2% of cost)
Retailer Price (P_R)	6,97 (+26,8% of cost)	11,53 (+109,7% of cost)	7,64 (+38,9% of cost)

14. Which of the following alternatives would you choose? (Assume that the production cost for carobs equal 5,5 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	7,43 (+35% of cost)	6,33 (+15% of cost)	5,78 (+5% of cost)
Wholesaler Price (P_W)	7,80 (41,9% of cost)	7,27 (+32,2% of cost)	7,80 (41,9% of cost)
Retailer Price (P_R)	8,97 (+63% of cost)	7,64 (+38,9% of cost)	10,52 (+91,3% of cost)

15. Which of the following alternatives would you choose? (Assume that the production cost for carobs equal 5,5 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	6,33 (+15% of cost)	6,33 (+15% of cost)	6,33 (+15% of cost)
Wholesaler Price (P_W)	6,64 (+20,8% of cost)	8,54 (+55,3% of cost)	6,64 (+20,8% of cost)
Retailer Price (P_R)	6,97 (+26,8% of cost)	9,82 (+78,6% of cost)	8,97 (+63% of cost)

16. Which of the following alternatives would you choose? (Assume that the production cost for carobs equal 5,5 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	7,43 (+35% of cost)	6,33 (+15% of cost)	5,78 (+5% of cost)
Wholesaler Price (P_W)	8,54 (+55,3% of cost)	8,54 (+55,3% of cost)	6,06 (+10,2% of cost)
Retailer Price (P_R)	11,53 (+109,7% of cost)	9,82 (+78,6% of cost)	6,37 (+15,3% of cost)

17. Which of the following alternatives would you choose? (Assume that the production cost for carobs equal 5,5 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	7,43 (+35% of cost)	5,78 (+5% of cost)	6,33 (+15% of cost)
Wholesaler Price (P_W)	7,80 (41,9% of cost)	7,80 (41,9% of cost)	7,27 (+32,2% of cost)
Retailer Price (P_R)	8,19 (+48,9% of cost)	10,52 (+91,3% of cost)	8,36 (+52% of cost)

18. Which of the following alternatives would you choose? (Assume that the production cost for carobs equal 5,5 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	6,33 (+15% of cost)	5,78 (+5% of cost)	7,43 (+35% of cost)
Wholesaler Price (P_W)	6,64 (+20,8% of cost)	7,80 (41,9% of cost)	7,80 (41,9% of cost)
Retailer Price (P_R)	7,64 (+38,9% of cost)	8,97 (+63% of cost)	8,97 (+63% of cost)

19. Which of the following alternatives would you choose? (Assume that the production cost for carobs equal 5,5 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	5,78 (+5% of cost)	6,33 (+15% of cost)	7,43 (+35% of cost)
Wholesaler Price (P_W)	7,80 (41,9% of cost)	5,78 (+5% of cost)	8,54 (+55,3% of cost)
Retailer Price (P_R)	8,97 (+63% of cost)	7,80 (41,9% of cost)	8,97 (+63% of cost)

20. Which of the following alternatives would you choose? (Assume that the production cost for carobs equal 5,5 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	6,33 (+15% of cost)	7,43 (+35% of cost)	5,78 (+5% of cost)
Wholesaler Price (P_W)	8,54 (+55,3% of cost)	7,80 (41,9% of cost)	6,64 (+20,8% of cost)
Retailer Price (P_R)	8,97 (+63% of cost)	8,19 (+48,9% of cost)	8,97 (+63% of cost)

MOROCCO – DRIED FIGS

Please mark down your preferred alternative between A, B, or C (*Only <u>one option</u> isallowed*).

1. Which of the following alternatives would you choose? (Assume that the production cost for dried figs equal 25 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	28,75 (+15% of cost)	26,25 (+5% of cost)	33,75 (+35% of cost)
Wholesaler Price (P_W)	38,81 (+55,2% of cost)	30,19 (+20,7% of cost)	35,44 (+41,8% of cost)
Retailer Price (P_R)	52,40 (+109,6% of cost)	31,70 (+26,8% of cost)	40,75 (+63% of cost)

2. Which of the following alternatives would you choose? (Assume that the production cost for dried figs equal 25 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	26,25 (+5% of cost)	28,75 (+15% of cost)	33,75 (+35% of cost)
Wholesaler Price (P_W)	27,56 (+10,2% of cost)	33,06 (+32,3% of cost)	45,56 (+82,24% of cost)
Retailer Price (P_R)	28,94 (+15,76% of cost)	44,63	52,40 (+109,6% of cost)

3. Which of the following alternatives would you choose? (Assume that the production cost for dried figs equal 25 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	26,25 (+5% of cost)	33,75 (+35% of cost)	26,25 (+5% of cost)
Wholesaler Price (P_W)	30,19 (+20,7% of cost)	35,44 (+41,8% of cost)	35,44 (+41,8% of cost)

Retailer Price (P_R)	31,70 (+26,8% of cost)	40,75 (+63% of cost)	47,84 (+91,36% of cost)

4. Which of the following alternatives would you choose? (Assume that the production cost for dried figs equal 25 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	26,25 (+5% of cost)	26,25 (+5% of cost)	33,75 (+35% of cost)
Wholesaler Price (P_W)	30,19 (+20,7% of cost)	27,56 (+10,2% of cost)	45,56 (+82,24% of cost)
Retailer Price (P_R)	31,70 (+26,8% of cost)	37,21 (+48,84% of cost)	52,40 (+109,6% of cost)

5. Which of the following alternatives would you choose? (Assume that the production cost for dried figs equal 25 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	28,75 (+15% of cost)	28,75 (+15% of cost)	26,25 (+5% of cost)
Wholesaler Price (P_W)	33,06 (+32,3% of cost)	38,81 (+55,2% of cost)	27,56 (+10,2% of cost)
Retailer Price (P_R)	38,02 (+52,08% of cost)	40,75 (+63% of cost)	37,21 (+48,84% of cost)

6. Which of the following alternatives would you choose? (Assume that the production cost for dried figs equal 25 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	28,75 (+15% of cost)	33,75 (+35% of cost)	26,25 (+5% of cost)
Wholesaler Price (P_W)	30,19 (+20,7% of cost)	38,81 (+55,2% of cost)	35,44 (+41,8% of cost)
Retailer Price (P_R)	34,72 (+38,9% of cost)	52,40 (+109,6% of cost)	37,21 (+48,84% of cost)

7. Which of the following alternatives would you choose? (Assume that the production cost for dried figs equal 25 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	33,75 (+35% of cost)	26,25 (+5% of cost)	28,75 (+15% of cost)
Wholesaler Price (P_W)	45,56 (+82,24% of cost)	27,56 (+10,2% of cost)	33,06 (+32,3% of cost)
Retailer Price (P_R)	61,51 (+146,04% of cost)	28,94 (+15,76% of cost)	34,72 (+38,9% of cost)

8. Which of the following alternatives would you choose? (Assume that the production cost for dried figs equal 25 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	33,75 (+35% of cost)	26,25 (+5% of cost)	28,75 (+15% of cost)
Wholesaler Price (P_W)	45,56 (+82,24% of cost)	30,19 (+20,7% of cost)	30,19 (+20,7% of cost)
Retailer Price (P_R)	52,40 (+109,6% of cost)	31,70 (+26,8% of cost)	40,75 (+63% of cost)

9. Which of the following alternatives would you choose? (Assume that the production cost for dried figs equal 25 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	26,25 (+5% of cost)	28,75 (+15% of cost)	33,75 (+35% of cost)
Wholesaler Price (P_W)	30,19 (+20,7% of cost)	33,06 (+32,3% of cost)	38,81 (+55,2% of cost)
Retailer Price (P_R)	40,75 (+63% of cost)	38,02 (+52,08% of cost)	40,75 (+63% of cost)

10. Which of the following alternatives would you choose? (Assume that the production cost for dried figs equal 25 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	28,75 (+15% of cost)	33,75 (+35% of cost)	26,25 (+5% of cost)
Wholesaler Price (P_W)	38,81 (+55,2% of cost)	35,44 (+41,8% of cost)	27,56 (+10,2% of cost)
Retailer Price (P_R)	40,75 (+63% of cost)	47,84 (+91,36% of cost)	31,70 (+26,8% of cost)

11. Which of the following alternatives would you choose? (Assume that the production cost for dried figs equal 25 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	26,25 (+5% of cost)	33,75 (+35% of cost)	28,75 (+15% of cost)
Wholesaler Price (P_W)	30,19 (+20,7% of cost)	38,81 (+55,2% of cost)	33,06 (+32,3% of cost)
Retailer Price (P_R)	40,75 (+63% of cost)	40,75 (+63% of cost)	38,02 (+52,08% of cost)

12. Which of the following alternatives would you choose? (Assume that the production cost for dried figs equal 25 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	33,75 (+35% of cost)	26,25 (+5% of cost)	28,75 (+15% of cost)
Wholesaler Price (P_W)	38,81 (+55,2% of cost)	27,56 (+10,2% of cost)	38,81 (+55,2% of cost)
Retailer Price (P_R)	52,40 (+109,6% of cost)	31,70 (+26,8% of cost)	40,75 (+63% of cost)

13. Which of the following alternatives would you choose? (Assume that the production cost for dried figs equal 25 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	26,25 (+5% of cost)	33,75 (+35% of cost)	28,75 (+15% of cost)
Wholesaler Price (P_W)	27,56 (+10,2% of cost)	45,56 (+82,24% of cost)	33,06 (+32,3% of cost)
Retailer Price (P_R)	31,70 (+26,8% of cost)	52,40 (+109,6% of cost)	34,72 (+38,9% of cost)

14. Which of the following alternatives would you choose? (Assume that the production cost for dried figs equal 25 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	33,75 (+35% of cost)	28,75 (+15% of cost)	26,25 (+5% of cost)
Wholesaler Price (P_W)	35,44 (+41,8% of cost)	33,06 (+32,3% of cost)	35,44 (+41,8% of cost)
Retailer Price (P_R)	40,75 (+63% of cost)	34,72 (+38,9% of cost)	47,84 (+91,36% of cost)

15. Which of the following alternatives would you choose? (Assume that the production cost for dried figs equal 25 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	28,75 (+15% of cost)	28,75 (+15% of cost)	28,75 (+15% of cost)
Wholesaler Price (P_W)	30,19 (+20,7% of cost)	38,81 (+55,2% of cost)	30,19 (+20,7% of cost)
Retailer Price (P_R)	31,70 (+26,8% of cost)	44,63 (78,52% of cost)	40,75 (+63% of cost)

16. Which of the following alternatives would you choose? (Assume that the production cost for dried figs equal 25 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	33,75 (+35% of cost)	28,75 (+15% of cost)	26,25 (+5% of cost)
Wholesaler Price (P_W)	38,81 (+55,2% of cost)	38,81 (+55,2% of cost)	27,56 (+10,2% of cost)
Retailer Price (P_R)	52,40 (+109,6% of cost)	44,63 (78,52% of cost)	28,94 (+15,76% of cost)

17. Which of the following alternatives would you choose? (Assume that the production cost for dried figs equal 25 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	33,75 (+35% of cost)	26,25 (+5% of cost)	28,75 (+15% of cost)
Wholesaler Price (P_W)	35,44 (+41,8% of cost)	35,44 (+41,8% of cost)	33,06 (+32,3% of cost)
Retailer Price (P_R)	37,21 (+48,84% of cost)	47,84 (+91,36% of cost)	38,02 (+52,08% of cost)

18. Which of the following alternatives would you choose? (Assume that the production cost for dried figs equal 25 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	28,75 (+15% of cost)	26,25 (+5% of cost)	33,75 (+35% of cost)
Wholesaler Price (P_W)	30,19 (+20,7% of cost)	35,44 (+41,8% of cost)	35,44 (+41,8% of cost)
Retailer Price (P_R)	34,72 (+38,9% of cost)	40,75 (+63% of cost)	40,75 (+63% of cost)

19. Which of the following alternatives would you choose? (Assume that the production cost for dried figs equal 25 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	26,25 (+5% of cost)	28,75 (+15% of cost)	33,75 (+35% of cost)
Wholesaler Price (P_W)	35,44 (+41,8% of cost)	26,25 (+5% of cost)	38,81 (+55,2% of cost)
Retailer Price (P_R)	40,75 (+63% of cost)	35,44 (+41,8% of cost)	40,75 (+63% of cost)

20. Which of the following alternatives would you choose? (Assume that the production cost for dried figs equal 25 MAD/kg) (*Choose A, B, or C*)

	A	B	C
Producer Price (P_F)	28,75 (+15% of cost)	33,75 (+35% of cost)	26,25 (+5% of cost)
Wholesaler Price (P_W)	38,81 (+55,2% of cost)	35,44 (+41,8% of cost)	30,19 (+20,7% of cost)
Retailer Price (P_R)	40,75 (+63% of cost)	37,21 (+48,84% of cost)	40,75 (+63% of cost)