Experimental Design of iLEE2

February 6, 2012

Abstract

This document describes the design of iLEE2, the second wave of the internet Laboratory for Experimental Economics project. The iLEE project is hosted at the University of Copenhagen, funded by the Carlsberg Foundation, supported by Statistics Denmark and directed by Jean-Robert Tyran. Nikolaos Korfiatis was responsible for coding the web interface and Eva Gregersen was in charge of implementing all other operational aspects of iLEE2. Scientific collaborators responsible for the design of the respective modules were Alexander Cappelen, Erik Ø. Sørensen, Bertil Tungodden (all NHH Bergen), Rupert Sausgruber (U Innsbruck), Thomas Stephens, Jean-Robert Tyran and Erik Wengström (then both U Copenhagen).

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1 Introduction

This document describes the design of iLEE2, an experiment carried out over the internet with approx. 1,400 participants from the adult Danish population. iLEE2 has two Parts. In Part 1, participants make decisions (data collection part, 28 May-19 July 2009). In Part 2, participants get feedback and enter their bank account information in order to receive their payments (28 July-10 August 2009).

Part 1 consists of five independent modules, and participants are paid according to their choices in most of these. The average participant takes about 35 minutes to complete, and earns approx. 30 Euros.

Pretest: Three pretests were run prior to the launch iLEE2 (April 28-30, May 4-10, May 22, 2009). They mainly served to test technical aspects (such as treatment allocation) of the waves, and to calibrate payoffs and completion times. For each pretest hundreds of subjects from the 2005 Politiken database were invited to participate, and participation was on a first-come-first-serve basis. The number of subjects to complete the last two pretests were 100 and 41, respectively and they earned DKK 205 on average.

2 Recruitment of subjects

2.1 Overview

Summary: We invited 2,291 panelists for iLEE2. All of these had completed iLEE1 in 2008 and 1,395 of these completed iLEE2.

Review of recruiting in iLEE1: In May 2008, we carried out iLEE1, the first wave of the panel. Statistics Denmark randomly selected 22,027 Danes of age 18-80. Of these, 2,291 completed iLEE1. Note that the participation rate in iLEE1 is low because we blocked login when a sufficient number of participants had logged in.

Details for recruiting in iLEE2: Statistics Denmark sent out invitation letters for iLEE2 to the 2,291 completers of iLEE1 on May 28, 2009. All invited subjects received the same invitation letter mentioning that all persons invited had completed iLEE1 one year earlier (see Appendix A).

A reminder letter was sent out on 10 June 2009 (see Appendix B). The response rate was 69% (1,581 out of the 2,291 invited subjects logged in and completed the some background questions). The completion rate was 88% (1,395 out of 1,581 completed the experiment), the payout rate was 77% (1,067 out of the 1,395 completers were paid, the remaining 328 did not log in for Part 2 or failed to indicate a valid bank account). Average earnings were DKK 207 (or EUR 28).

The subjects are anonymous to us. Statistics Denmark assigned unique subject ID numbers to the randomly selected sample invited for iLEE1. Only Statistics Denmark knows the key of how ID numbers relate to persons (e.g. their CPR numbers). Statistics Denmark used the same ID number for a given person when sending out invitation letters. Thus, a particular person has had the same ID number across waves, and we can therefore track an individual's behavior across waves.

2.2 Sample representativeness

The report on sample representativeness below is based on the subjects' self-reported characteristics. We plan to evaluate representativeness using the matched data from DS in greater detail at a later point. The sample of iLEE2 completers is clearly not representative of the Danish population in some dimensions (e.g. age), but is close to being representative in others (e.g. gender).

Figure 1: Distribution of participants in iLEE2 by Age

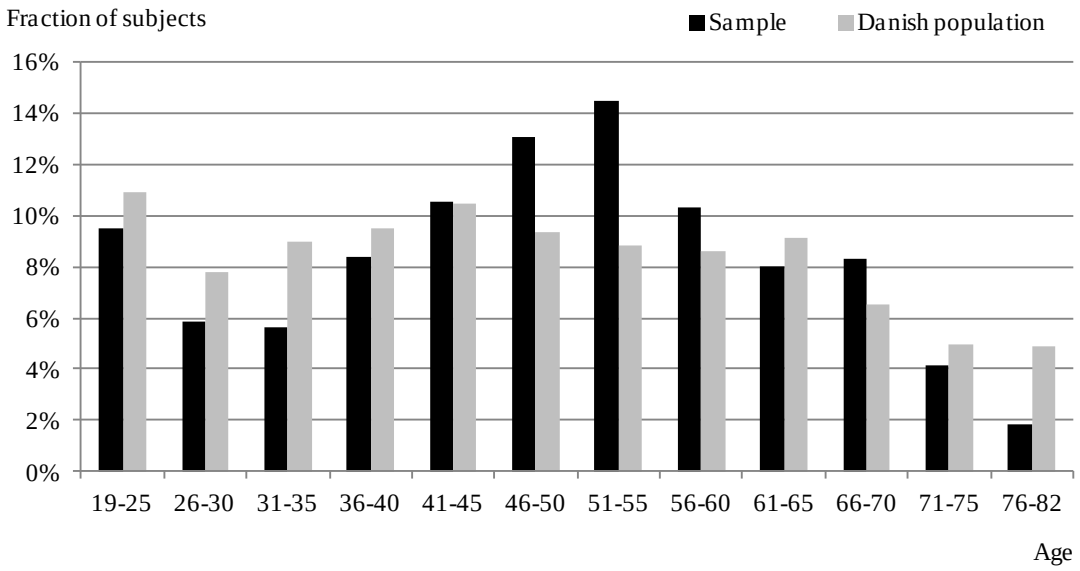
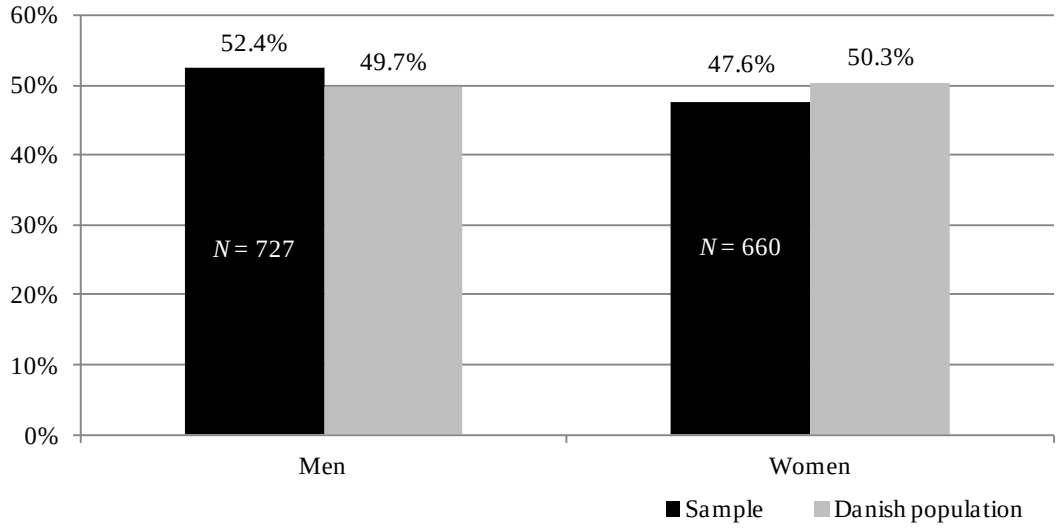


Figure 1 shows the distribution of participants by age, which is significantly different from the distribution in the Danish population ($\chi^2 = 139.11$, $d.f. = 11$, $p < 0.001$). Broadly speaking, the young (ages 26-40) and the old (above 65) tend to be underrepresented and the middle-aged (46-60) tend to be overrepresented.

Figure 2 shows that men are slightly overrepresented in iLEE2 ($\chi^2 = 4.15$, $d.f. = 1$, $p \cong 0.044$).

Figure 2: Distribution of participants in iLEE2 by Gender



3 Data

Following the procedure in the previous waves, the data of iLEE2 is sent to Statistics Denmark (SD) upon closing of iLEE2. SD uses the subject ID numbers to match experimental data with a battery of register data and experimental data from iLEE1. The data is stored in an anonymous format at a server at Statistics Denmark. Data analysis on the matched data can only be performed on the servers of SD. Only the data analysis (e.g. regression results) but not the actual data can be downloaded by researchers. Access to the matched data is subject to rigorous regulations by the Danish authorities and requires permission and contractual agreements with SD and the Department of Economics, University of Copenhagen.

4 Experimental design

Part 1 of iLEE2 has 6 "modules" (i.e. elements in which we collect data). Five of these modules are incentivized (i.e. participants earn money according to their choices) and one (module 4) is non-incentivized. The modules appeared in the fixed order shown in Figure 3.

General structure of modules: All main modules start with a screen informing subjects that they now enter a new module. Typically, the start screen is an instructions screen for the new module explaining the task or the rule of interaction, often including numerical examples and graphic illustrations.

Figure 3: Modules in Part 1

0. Introduction
    (a) Login screen
    (b) Welcome and basic information screen
    (c) Preliminary background questions
1. Dictator game
    (a) Instructions
    (b) Distribution phase (one decision)
2. Dictator game with production
    (a) General instructions
    (b) Instructions for production phase
    (c) Production phase (up to 15 minutes)
    (d) Instructions for distribution phase
    (e) Distribution phase (nine decisions)
    (f) Revision of decisions
3. Attitudes on fair distribution
    (a) Instructions
    (b) Seven questions (three are on beliefs of other subjects and are incentivized)
4. Questionnaire (non-incentivized)
    (a) Eight questions about house prices
    (b) Two questions about tax incidence
5. Elicitation of beliefs on public goods (iLEE1 follow-up)
    (a) Instructions
    (b) Questions

6. Lottery choice (iLEE1 follow-up)
    (a) Instructions
    (b) Decisions between two lotteries (2x10 lottery choices)
    (c) Question
7. End of Part 1
    (a) Final comments and a reminder about logging in again later to receive payment

Assignment of subjects to treatments: Subjects are assigned to treatments, types and roles randomly whenever possible. The order of modules is as shown above.

Attrition by module: Table 1 shows how attrition by module. Total attrition in Part 1 is 11.8 percent (186 out of the 1,581 subjects who completed the background questions module 0).

Table 1: Attrition in iLEE4 by module

	Total	
N	Completions	Attrition
Introduction	1,581	
Module 1	1,526	55
Module 2	1,487	39
Module 3	1,436	51
Module 4	1,445	-9
Module 5	1,396	49
Module 6	1,395	1
Total	1,395	186

Subjects receive feedback on earnings and enter their bank account information in Part 2 in the same order as the modules appeared in Part 1.

5 Detailed description of modules

General structure of screens: All screens described below have the same basic layout and structure. The bottom band informs that the Department of Economics at the University of Copenhagen hosts the experiment and features a "logout" button. Participants can log out at their discretion and come back any time while Part 1 is open. They are then routed back to the module they left. The top band features a "help" option informing about the closing date of the wave and our contact details. An "Instructions" option on most decision screens allows subjects to review instructions for the current module. Decision buttons are placed in the lower right corner of the screen. Screenshots for specific screens are available on request.

Module 0: Introduction

This module is identical to module 0 in all previous waves of the panel.

(a) Login screen: At the URL (*http://ilee.econ.ku.dk*) indicated in the invitation letter, subjects log in by typing their personal ID number indicated in the letter.

(b) Welcome screen: informs that participation in the experiment is valuable to research and reminds that it is important that the person participating in the experiment is the person named in the invitation letter. Cautions that the experiment has to be completed to be entitled to any payment. Informs that expected time for completion is approximately 40 minutes, and that they can log out during the experiment and return at a later point in time until the end of the experiment. Subjects are reassured that they remain anonymous to us and other participants. The subjects have all completed one previous iLEE wave and are therefore familiar with the procedure.[1]

(c) Preliminary background questions about the subject's age, gender and highest completed level of education. These questions are placed at the beginning of the wave when minimal attrition has taken place such that we can later validate the identities of as many subjects as possible. Validation is done by comparing a subject's self-reported demographic data with the register data from Statistics Denmark for the individual to whom the invitation letter was addressed. We thus obtain a proxy control against the participating subject being the wrong individual.

After completing the preliminary background questions, subjects proceed to module 1.

[1] In treatment "hypothetical" of iLEE1, subjects were not promised and paid any money. However, in iLEE2 all subjects were assured in the instructions that they would earn real money if they completed the experiment and indicate a valid bank account.

Module 1: Dictator game without production

This module has been designed by Alexander Cappelen, Erik Ø. Sørensen, Bertil Tungodden, and Jean-Robert Tyran.

In essence, two subjects are matched. They are endowed with DKK 75 each (DKK 150 in total). Each subject is involved in two decisions. In the first, subject *X* is matched with subject *Y*, and subject *X* decides whether to take or pass money, i.e. how the total endowment of DKK 150 is distributed among them. In the second decision, subject *X* is matched with a different subject $Z \neq Y$ and *Z* decides on the allocation of the total endowment. There are no treatment variations in this module.

In total, 1,526 subjects complete this module. The average earnings in this module are DKK 76.7.

(a) **Instructions**: Screen (1): Each subject is informed that all subjects are endowed with DKK 75 (USD 13, see Figure 4), that they are involved in two decision situations with a different other subjects, and one of these is paid at random. In one situation the subject is active (the dictator); in the other, the subject is passive.

Figure 4: Initial distribution of endowments in each match pair.

Screen (2): Subjects are informed that they are matched with a different subject who decides how to split the total endowment.

(b) Decision screen: dictators choose a line from the list shown in Figure 5 (table shows percentage for me/other, amount for me, for other). By clicking on a radio button in the rightmost column, a pie chart (similar to Figure 4) appears to visualize the respective distribution. The figure is updated as buttons are clicked. A choice is made by clicking the confirm button.

Figure 5: Decision screen

Din beslutning

Vælg en af mulighederne nedenfor og tryk **Indsend beslutning**.

	Fordeling (dig - den anden)	Du får	Den anden får	Din beslutning
1	100% - 0%	150 kr.	0 kr.	○
2	90% - 10%	135 kr.	15 kr.	○
3	80% - 20%	120 kr.	30 kr.	○
4	70% - 30%	105 kr.	45 kr.	○
5	60% - 40%	90 kr.	60 kr.	○
6	50% - 50%	75 kr.	75 kr.	○
7	40% - 60%	60 kr.	90 kr.	○
8	30% - 70%	45 kr.	105 kr.	○
9	20% - 80%	30 kr.	120 kr.	○
10	10% - 90%	15 kr.	135 kr.	○
11	0% - 100%	0 kr.	150 kr.	○

Module 2: Dictator game with production

This module has been designed by Alexander Cappelen, Erik Ø. Sørensen, Bertil Tungodden, and Jean-Robert Tyran.

This module follows the same logic as the previous one but the distribution phase is now preceded by a production phase. In the production phase, subjects earn their endowment in a real effort task (counting orange cells in a 10x10 grid). They are paid a piece rate per correct answer and can work for up to 15 minutes. Subjects know that the piece rate is low (DKK 0.6) or high (DKK 1.2) but the piece rate is assigned to them only after they completed the task.

Distribution phase: Each subject makes 9 decisions on how to share the total "pie" that results from the value of their own production and the value of the production of their match (they are matched with nine different subjects in a sequential matching procedure). Distribution choices that differ from the initial distribution involve transfers of money from or to the decision maker. In decisions 1-3, the transfer cost (percent of the transferred amount that is lost) is 0%, in 4-6 it is 10%, and in 7-9 it is 50% of the transferred amount. Thus, changing the distribution as compared to the initial distribution involves varying degrees of efficiency losses. Each subject is also matched with nine (other) subjects in the role as recipients, i.e. each subject is matched with 18 different subjects.

The first 30 subjects to reach module 2 are matched with subjects from a pretest. The distribution of the production values in the pretest is not significantly different from the distribution in module 2 (two-sample *Z*-test, $p = 0.688$). Subjects in module 2 are paid for one match, either as the active or passive participant (50% chance). In particular, one decision situation is drawn and both players are paid according to the payoffs as explained below. If the drawn decision situation involves a pretest participant, the pretest participant is also paid out (in addition to his earnings in the pretest). After the first 30 participants had logged in, all subjects were exclusively matched with subjects from module 2. A matching algorithm ensures that each subject is paid according to exactly one match.

Payoffs: One decision/matching is drawn, and each subject is paid as either a dictator or a recipient in this decision.

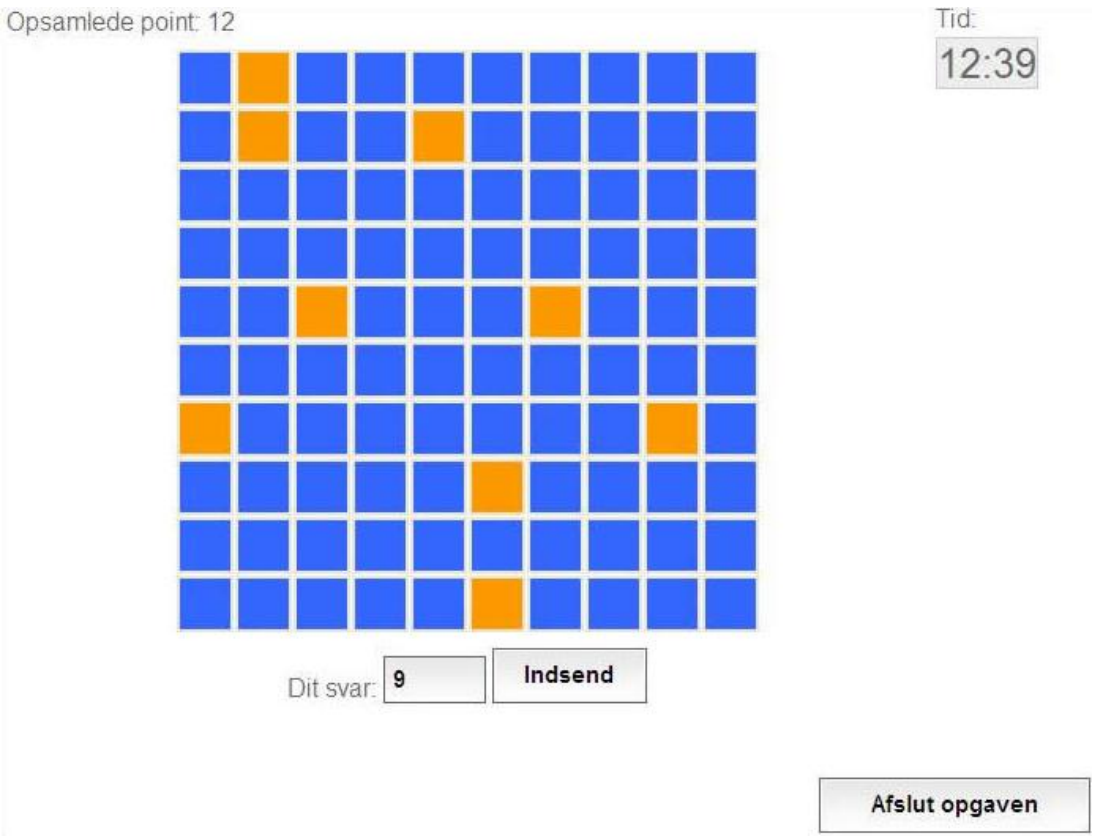
In total, 1,487 subjects completed module 2. Average payout in this module is DKK 83.67.

The sequence of screens is as follows.

(a) **General instructions:** Screen (1): Provides a summary: Informs that a production phase and a distribution phase follows, that they earn points in the production phase, that points are converted into money earnings according to a low or high piece rate, that they are matched with 9 other participants in sequence and decide on distributing the joint earnings in the pair. Screen (2): Informs that they have up to 15 minutes to earn points and that piece rates are announced after the task is over. Informs that in the distribution phase, they are matched with 9 different participants and learn the other subject's production and wage level. Informs that they are also matched with 9 decision makers in the passive role. Informs that only one of the 18 decision situations is paid out with equal probability.

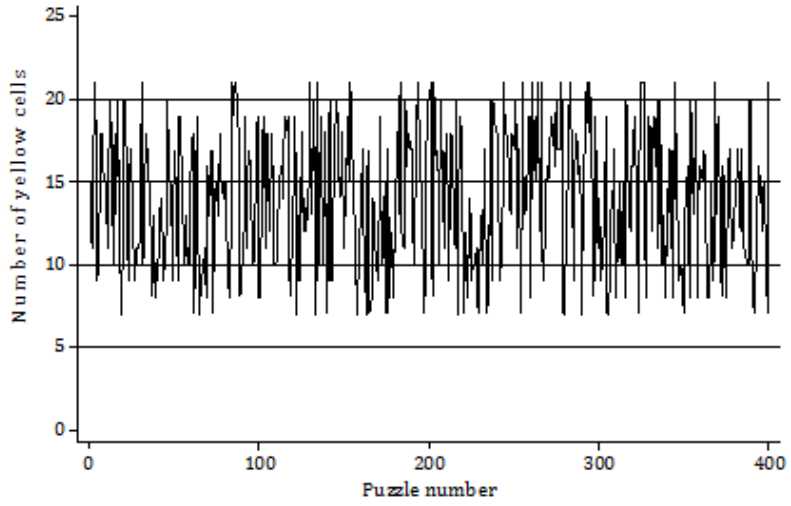
(b) **Instructions for the production phase**: Shows example of the task (see Figure 6). Explains that they earn one point for correctly indicating the number of orange cells, that the task is open for 15 minutes, that they can quit the task at any time. Informs that a piece rate ("wage level") is randomly (50%) assigned ex post (DKK 0.6 or 1 point = DKK 1.2).

Figure 6: Example of counting task



(c) **Production phase.** Subjects count the number of yellow cells in a 10x10 grid (see Figure 6). When submitting a correct answer, the counter is updated and a new grid is generated randomly. The level of difficulty measured as the number of orange-colored cells was constant over time ranging from 7 to 21 as shown in Figure 7. The tasks were shown in fixed order.

Figure 7: Number of yellow cells in each task



When submitting a wrong answer, the subject is told that it is wrong. A new grid appears when a correct answer is submitted. Subjects can review the instructions by clicking a button in the top bar of the screen. They can leave (but cannot return to) the real effort task by clicking a button in the lower right corner.

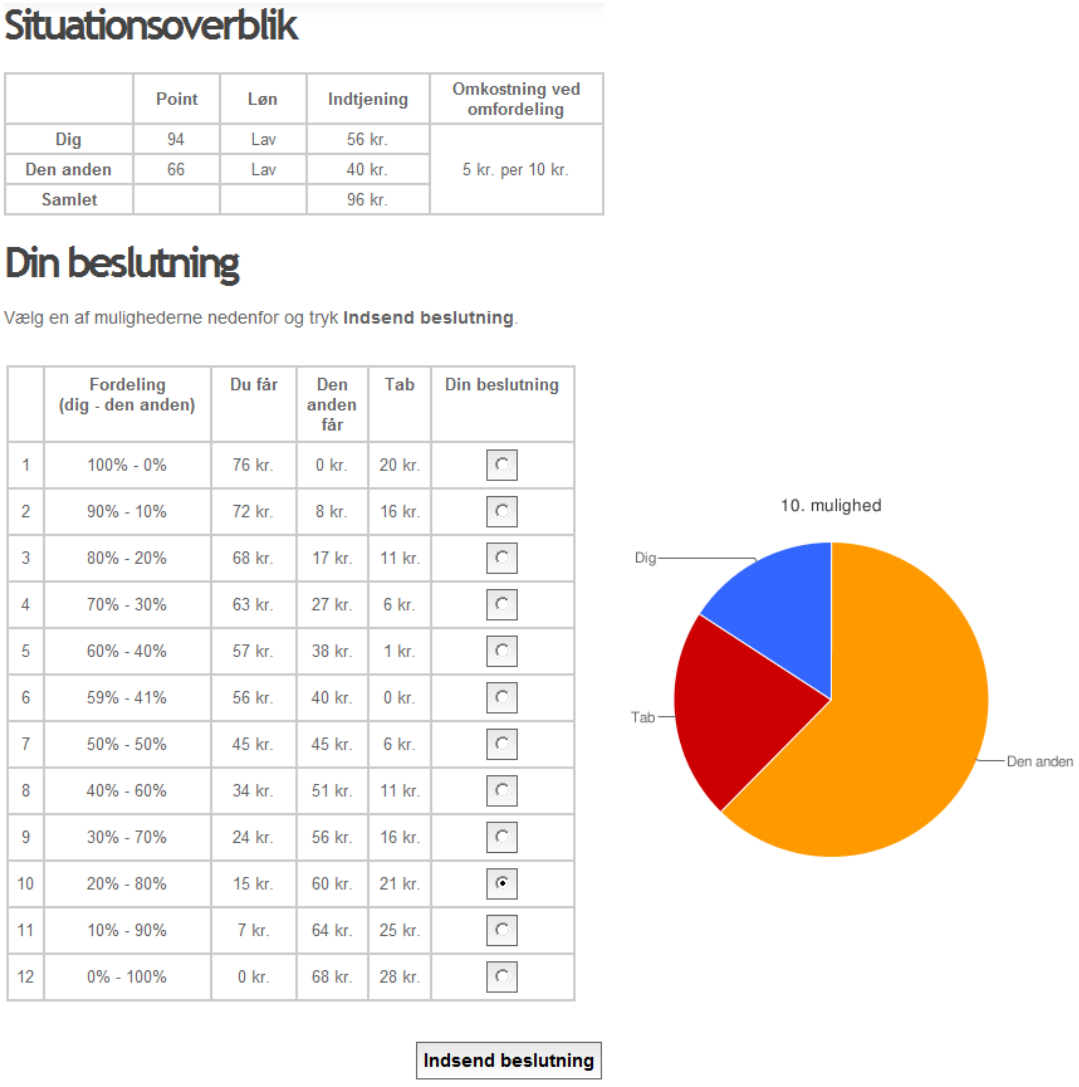
(d) **Instructions for the distribution phase**: Screen 1: Informs that the production phase is over and recaps points earned. Informs about the randomly assigned wage (0.6 or 1.2 DKK per point) and earnings in DKK. Screen 2: Announces that they will be matched with 9 other subjects in sequence, that they will be informed about the other subject's production (number of points), wage level, and earnings, that they have to decide on how to split the total income between themselves and their match. Announces that a summary screen will appear reviewing all 9 situations and decisions, allowing them to revise their any of their decisions.

(e) **Distribution phase**: Each match has three screens: Screen 1: Informs about the other subject's production, wage level, and earnings. Screen 2: Shows respective earnings in a pie chart like Figure 4. Screen 3: Decision screen like Figure 5. Again they are informed about the production, wage level, and earnings of both themselves and their match. The same list as in Figure 5 appears, but now the initial earnings distribution (i.e. no redistribution) is also an

option. After the 3rd decision screen, subjects are informed that redistributing (i.e. choosing a distribution that is different from the distribution resulting from production values) now costs 10% of the amount redistributed. After the 6th decision screen, subjects are informed that cost is now 50% (see example of redistribution with high cost in Figure 8).

(f) **Revision of decisions**: Overview screen recaps the 9 decisions in a list. Decisions are presented in the same order as they appeared in the module. When clicking on a "revise" button, the subject is taken to the respective decision screen and can revise the earlier decision. Clicking "confirm" on this screen takes the subject back to the overview screen. Subjects are directed to module 3 upon clicking the "confirm" button on the overview screen.

Figure 8: Example of choice (decision maker "dig" produced 94 points in real effort task, both got low wage rate of 0.6 DKK/point. The total pie is 96 DKK, the cost of redistributing away from 56 DKK and 40 DKK is 5 DKK per 10 DKK redistributed. The pie chart shows the consequences of choosing option 10 "20% for you, 80% for other", the table shows the respective DKK amounts: Passing 20 DKK to "other" reduces the decision maker´s income by 41 DKK = 56 DKK - 15 DKK)



Situationsoverblik

	Point	Løn	Indtjening	Omkostning ved omfordeling
Dig	94	Lav	56 kr.	5 kr. per 10 kr.
Den anden	66	Lav	40 kr.	
Samlet			96 kr.	

Din beslutning

Vælg en af mulighederne nedenfor og tryk **Indsend beslutning**.

	Fordeling (dig - den anden)	Du får	Den anden får	Tab	Din beslutning
1	100% - 0%	76 kr.	0 kr.	20 kr.	○
2	90% - 10%	72 kr.	8 kr.	16 kr.	○
3	80% - 20%	68 kr.	17 kr.	11 kr.	○
4	70% - 30%	63 kr.	27 kr.	6 kr.	○
5	60% - 40%	57 kr.	38 kr.	1 kr.	○
6	59% - 41%	56 kr.	40 kr.	0 kr.	○
7	50% - 50%	45 kr.	45 kr.	6 kr.	○
8	40% - 60%	34 kr.	51 kr.	11 kr.	○
9	30% - 70%	24 kr.	56 kr.	16 kr.	○
10	20% - 80%	15 kr.	60 kr.	21 kr.	◉
11	10% - 90%	7 kr.	64 kr.	25 kr.	○
12	0% - 100%	0 kr.	68 kr.	28 kr.	○

Indsend beslutning

Module 3: Fairness

This module has been designed by Alexander Cappelen, Erik Ø. Sørensen, Bertil Tungodden, and Jean-Robert Tyran.

Module 3 consists of a (partly incentivized) questionnaire related to modules 1 and 2, containing questions about subjects' own opinion on issues related to fairness and about beliefs on other subjects' opinions. Module 3 has no treatments and all questions are presented in constant order.

In total, 1,436 participants answered the questions in this module. All questions had to be answered in order to proceed to module 4. The average payout in this module is DKK 12.25.

(a) Instructions: Inform that questions related to the two previous modules follow. Some questions concern their own opinion, some are about the other subjects' opinions.

(b) **Seven questions**. Q1: *What do you think is a fair distribution*: Equal distribution (subjects receive half of the total earnings), transfers according to production, or no transfers? Click a radio button. Q2: *What do you believe others think is a fair distribution?* Answer possibilities are same as Q1, but now subjects have to enter percentages (need to sum to 100%). Q2 is incentivized (quadratic scoring rule, max. earnings DKK 10. However, due to a programming error, this variable was not stored in the database and has therefore not been paid out). Q3: *How do you weight fairness vs. self-interest?* Answers on 1-9 scale, where 1 is full weight on fairness, and 9 is full weight on self-interest. Q4: *How do you think others weight fairness vs. self-interest?* Same 1-9 scale. Selecting the modal answer to Q3 earns DKK 10. Q5: *How do you weight efficiency vs. self-interest?* Same 1-9 scale. Q6: *How do you think others weight efficiency vs. self-interest?* 1-9 scale. Selecting the modal answer to Q5 earns DKK 10. Q7: *Do you think hard work pays off in the long run?* 1-10 scale, where 1 is "hard work always pays off", and 10 is "Luck and network matter more for success". Question 7 and its answer scale is taken from World Value Survey 2005 (question V120).

Module 4: Questionnaire

The tax question (task 2) in this module was designed by Rupert Sausgruber, the inflation questions (task 1) by Thomas Stephens and Jean-Robert Tyran. This questionnaire has two parts investigating subjects' attitudes and evaluations of inflation (house prices) and tax incidence.

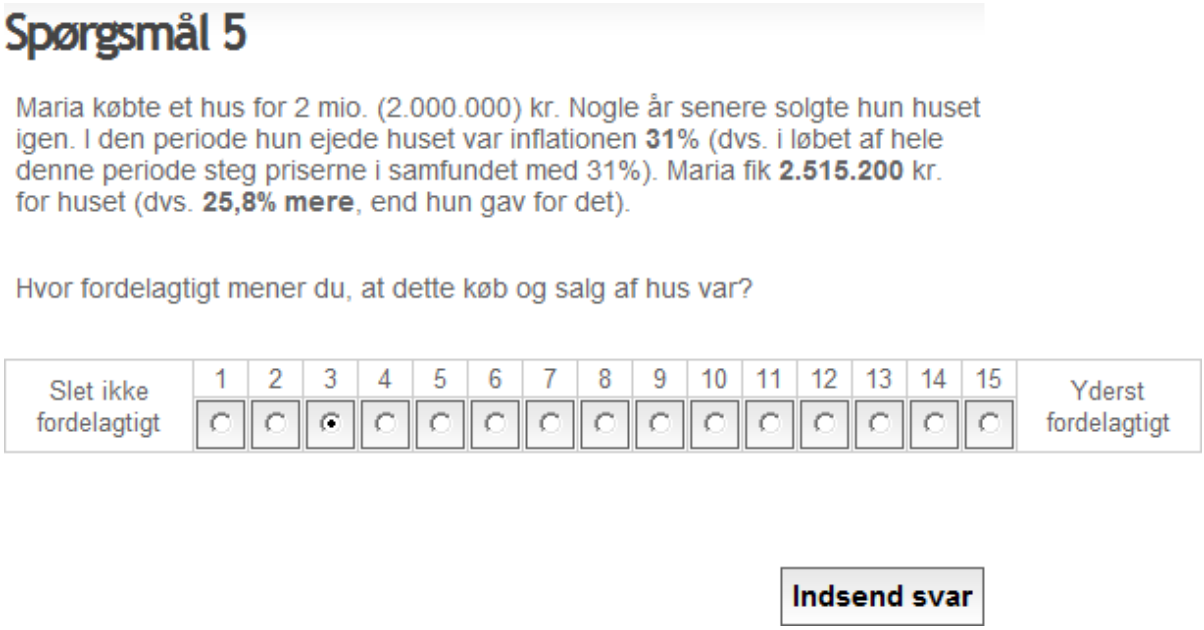
Task 1: Evaluate the advantageousness of 8 hypothetical housing transactions on a scale from 1 ('Not at all advantageous') to 15 ('Very advantageous'). All transactions involve a purchase price of DKK 2 million and varying selling prices (after an unspecified holding period). Transactions are described by the percentage change in the price and the rate of inflation over the holding period.

Presentation: Transactions are shown on separate screens. Screens appear in random but fixed (across subjects) order. By design, transactions are matched into 4 pairs. In each pair, a given real loss resulting from the transaction is either presented as a nominal loss (when inflation is low) or a nominal gain (when inflation is high).

Treatments: Subjects are assigned to a *precise* or a *rule-of-thumb* treatment which differ by whether the real losses are calculated by a precise or an approximate formula. A total of 1445 subjects complete the questions (751 in the precise and 694 in the rule-of-thumb treatment). No earnings.

Precise treatment: the real percentage loss from a transaction is $y = (\Delta - \pi)/(1 + \pi)$, where Δ is the percentage change in the price and π is the accumulated inflation.

Figure 9: Example of housing evaluation task in the *precise* treatment (nominal gain is 25.8%, accumulated inflation is 31%, resulting in a real loss of 4%)



A translation of the text in Figure 9 is as follows: Maria bought a house for DKK 2 million (2,000,000). Some years later she sold the house again. In the period she owned the house, inflation was 31% (i.e., over the entire period, prices in society increased by 31%). Maria received DKK 2,515,200 for the house (i.e., 25.8% more than she paid for it). How advantageous do you think this purchase and sale of the house was? (1 = not advantageous at all, 15 = very advantageous).

In the paired screen, accumulated inflation was 2%. The selling price given a 4% real loss was therefore DKK 1,958,400, resulting in a nominal loss of DKK 41,600 or 2.1%.

Rule-of-thumb treatment: the approximate real percentage loss is now simply $\tilde{y} = \Delta - \pi$. This means that the real scenarios within each pair are not precisely the same, but would appear to be so to subjects using the common heuristic of subtracting the accumulated inflation from the nominal price change.

The parameters for an approximate real loss of 4% are as follows. Nominal gain: 27% (rather than 25.8% as in the precise treatment), while the other numbers (inflation and buying price) are the same. Nominal loss: –2% (rather than –2.1%).

The parameters used in the precise and rule-of-thumb treatments are presented in Tables 2 and 3, respectively.

Table 2: Inflation question parameters in precise treatment

Buying price (DKK)	Selling price (DKK)	Nominal change (DKK)	Nominal change (%)	Accumulated inflation (%)	Real change (%)
2,000,000	1,979,600	-20,400	-1.0%	1.0%	-2.0%
2,000,000	2,175,600	175,600	8.8%	11.0%	-2.0%
2,000,000	1,958,400	-41,600	-2.1%	2.0%	-4.0%
2,000,000	2,515,200	515,200	25.8%	31.0%	-4.0%
2,000,000	1,858,400	-141,600	-7.1%	1.0%	-8.0%
2,000,000	2,355,200	355,200	17.8%	28.0%	-8.0%
2,000,000	1,754,400	-245,600	-12.3%	2.0%	-14.0%
2,000,000	2,373,600	373,600	18.7%	38.0%	-14.0%

Table 3: Inflation question parameters in rule-of-thumb treatment

Buying price (DKK)	Selling price (DKK)	Nominal change (DKK)	Nominal change (%)	Accumulated inflation (%)	Real change (%)
2,000,000	1,980,000	-20,000	-1.0%	1.0%	-2.0%
2,000,000	2,180,000	180,000	9.0%	11.0%	-1.8%
2,000,000	1,960,000	-40,000	-2.0%	2.0%	-3.9%
2,000,000	2,540,000	540,000	27.0%	31.0%	-3.1%
2,000,000	1,860,000	-140,000	-7.0%	1.0%	-7.9%
2,000,000	2,400,000	400,000	20.0%	28.0%	-6.3%
2,000,000	1,760,000	-240,000	-12.0%	2.0%	-13.7%
2,000,000	2,480,000	480,000	24.0%	38.0%	-10.1%

Task 2: Indicate preference for tax on buyers or sellers. Each subject is presented with one choice between a tax levied on buyers of some good of X DKK or a tax levied on sellers of that good of Y DKK and indicates which option is preferred (by clicking on a radio button).

Within-subjects design: Each subject is shown one randomly selected question from a set of 4 questions. Questions vary by whether X > Y or vice versa.

Text: *Forestil dig, at Folketinget har behov for at øge skatteindtægterne for at mindske statsgælden. Folketinget overvejer at øge beskatningen af biler. Der er to muligheder. Forbrugere skal betale en skat på* X *kr., når de køber en bil, eller bilforhandlere skal betale en skat på* Y *kr., hver gang de sælger en bil.*

Translation: *Imagine that the Parliament needs to increase taxes in order to reduce the national debt. It is considering a tax increase on cars. There are two possibilities. Consumers will pay a tax of DKK* X *when they buy a car, or dealers will pay a tax of DKK* Y *each time they sell a car.*

Parameters: Q1: $Y = 500$, $X = 550$, Q2: $Y = 550$, $X = 500$ (Question Q3 uses the same parameters as Q1 but reverses the order of presentation in Q1, Q4 the order in Q2).

1,445 subjects complete this (non-incentivized) questionnaire.

Module 5: Elicitation of beliefs on public goods

This module has been designed by Jean-Robert Tyran and Erik Wengström.

Subjects (who had all previously participated in iLEE1) indicate beliefs about other subjects' actions in the public goods game of iLEE1 (see module 1). Subjects are assigned to the same treatment (*give* or *take*) as in iLEE1. 1,396 subjects complete this module, and the average earnings in this module are DKK 19.8.

(a) **Instructions**: Subjects review the instructions as used in module 1 in iLEE1.

(b) **Questions**: On all screens, subjects could click on a "Review instructions" button in the top bar. Screen 1: *How much do you think the others contributed to/took from the common pool?* Indicate how many out of 10 typical participants are in each of the 5 categories: DKK 0-10, DKK 11-20, DKK 21-30, DKK 31-40, and DKK 41-50 (numbers must sum to 10). Subjects earn DKK 1 for each of the 10 subjects allocated to the right category. Screen 2: presents instructions for the next questions, explains that subjects are paid for one randomly selected of the five questions presented next, and that participants earn money for indicating correct beliefs (a quadratic scoring rule was used to determine payments). Screen 3: What do you think was the average contribution/taking by participants by (i) *age group* (age 18-29; 30-39; 40-49; 50-59; 60-80), (ii) *gender* (men; women), (iii) *educational level* (9^{th} grade; vocational education; high school; short tertiary education; long tertiary education), (iv) *monthly income* (DKK 0-10,000; DKK 10,001-20,000; DKK 20,001-30,000; DKK 30,001-40,000; DKK 40,001 or more), and (v) *ideology* (1-3; 4-6; 7-10) on a 1-10 scale collected in iLEE1. Screen 4: Instructions for the next question. Screen 5: *What do you think the others on average answered to this question: Given that the others contributed/took DKK 0/25/50 on average, how much would you contribute?* Screen 6: Instructions for the next question. Screen 7: Guess how many chose each of two patterns: (i) Contributed nothing/took everything (selfish); (ii) conditional cooperation. 10 options were listed and subjects had to click on a radio button (see Figure 10). The correct answer earns DKK 10.

Figure 10: Question: How many subjects do you think were unconditional cooperators (Mønster A), conditional cooperators (Mønster B), and other (Andre Mønstre), e.g. non-cooperators.

Jeg tror, besvarelserne fra sidste år fordelte sig således:			
	MØNSTER A	MØNSTER B	ANDRE MØNSTRE
○	Mellem 0% og 7.99%	Mellem 80% og 72.01%	20%
○	Mellem 8% og 15.99%	Mellem 72% og 64.01%	20%
○	Mellem 16% og 23.99%	Mellem 64% og 56.01%	20%
○	Mellem 24% og 31.99%	Mellem 56% og 48.01%	20%
◉	Mellem 32% og 39.99%	Mellem 48% og 40.01%	20%
○	Mellem 40% og 47.99%	Mellem 40% og 32.01%	20%
○	Mellem 48% og 55.99%	Mellem 32% og 24.01%	20%
○	Mellem 56% og 63.99%	Mellem 24% og 16.01%	20%
○	Mellem 64% og 71.99%	Mellem 16% og 8.01%	20%
○	Mellem 72% og 80%	Mellem 8% og 0%	20%

Module 6: Lottery choice

This module has been designed by Jean-Robert Tyran and Erik Wengström.

Subjects repeatedly choose between two gambles (a "left" and a "right" lottery) as in iLEE1. Subjects are shown two lists in sequence and make 10 decisions (choose between a left and a right lottery) per list, i.e. 20 decisions in total. Note that all subjects had participated in iLEE1. The payoffs in the first list contained only possible gains, the second also contained possible losses. Subjects are paid according to the outcome of one randomly selected decision.

1,395 subjects completed this module. Average earnings are DKK 34.7.

Instructions: Reviews the game they played in module 3 of iLEE1. Informs that they make 20 decisions next (10 on each of two screens) and that the outcome of one of these 20 decisions is paid out. The payoffs are not the same as in iLEE1. The screens are shown in fixed order.

Decisions: Screen 1: contained no possible losses. See Figure 11. Screen 2: contained possible losses. See Figure 12.

Question: *Are you currently taking a tertiary education?* Possible answers: yes/no.

Figure 11: List without possible losses

Valg mellem plat eller krone-spil (1/2)

Angiv dine foretrukne spil.

	VENSTRE		Jeg foretrækker		HØJRE	
	KRONE	PLAT	Spillet til VENSTRE	Spillet til HØJRE	KRONE	PLAT
Beslutning 1	Vind 25 kr.	Vind 45 kr.	◉	○	Vind 2 kr.	Vind 40 kr.
Beslutning 2	Vind 25 kr.	Vind 45 kr.	◉	○	Vind 2 kr.	Vind 50 kr.
Beslutning 3	Vind 25 kr.	Vind 45 kr.	◉	○	Vind 2 kr.	Vind 55 kr.
Beslutning 4	Vind 25 kr.	Vind 45 kr.	◉	○	Vind 2 kr.	Vind 60 kr.
Beslutning 5	Vind 25 kr.	Vind 45 kr.	◉	○	Vind 2 kr.	Vind 65 kr.
Beslutning 6	Vind 25 kr.	Vind 45 kr.	○	◉	Vind 2 kr.	Vind 70 kr.
Beslutning 7	Vind 25 kr.	Vind 45 kr.	○	◉	Vind 2 kr.	Vind 75 kr.
Beslutning 8	Vind 25 kr.	Vind 45 kr.	○	◉	Vind 2 kr.	Vind 95 kr.
Beslutning 9	Vind 25 kr.	Vind 45 kr.	○	◉	Vind 2 kr.	Vind 135 kr.
Beslutning 10	Vind 25 kr.	Vind 45 kr.	○	◉	Vind 2 kr.	Vind 215 kr.

Figure 12: List with possible losses

Valg mellem plat eller krone-spil (2/2)

Angiv igen, hvilke spil du foretrækker.

Denne gang er der mulighed for tab, som i givet fald vil blive trukket fra din øvrige indtjening i eksperimentet. (Husk, at kun én af samtlige 20 rækker i de to tabeller bliver tilfældigt udvalgt til betaling.)

	VENSTRE		Jeg foretrækker		HØJRE	
	KRONE	PLAT	Spillet til VENSTRE	Spillet til HØJRE	KRONE	PLAT
Beslutning 1	Vind 60 kr.	Vind 20 kr.	◉	○	Vind 60 kr.	Tab 50 kr.
Beslutning 2	Vind 55 kr.	Vind 20 kr.	◉	○	Vind 60 kr.	Tab 50 kr.
Beslutning 3	Vind 50 kr.	Vind 20 kr.	◉	○	Vind 60 kr.	Tab 40 kr.
Beslutning 4	Vind 45 kr.	Vind 20 kr.	◉	○	Vind 60 kr.	Tab 40 kr.
Beslutning 5	Vind 40 kr.	Vind 20 kr.	◉	○	Vind 60 kr.	Tab 40 kr.
Beslutning 6	Vind 35 kr.	Vind 10 kr.	◉	○	Vind 60 kr.	Tab 40 kr.
Beslutning 7	Vind 30 kr.	Vind 10 kr.	◉	○	Vind 60 kr.	Tab 40 kr.
Beslutning 8	Vind 20 kr.	Vind 10 kr.	◉	○	Vind 60 kr.	Tab 35 kr.
Beslutning 9	Vind 10 kr.	Vind 0 kr.	○	◉	Vind 60 kr.	Tab 35 kr.
Beslutning 10	Vind 2 kr.	Vind 0 kr.	○	◉	Vind 60 kr.	Tab 20 kr.

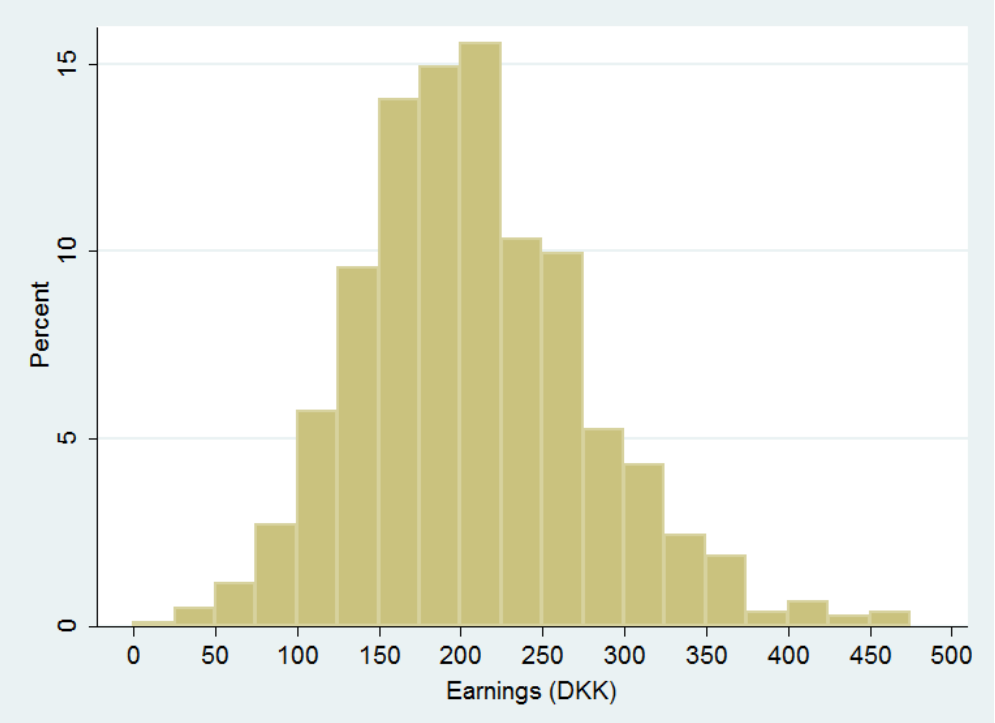
Module 7: End of Part 1

On the last screen of Part 1, subjects are told that they can login again from 1 July 2009 to see the outcome of the experiment, to review their earnings by module and to obtain their payments.

6 Payoff information

Figure 13 shows the distribution of payments for iLEE4. The average and median payments were DKK 207 and DKK 203 (slightly below 30 Euro), respectively. The average participant takes about 35 minutes to complete the entire wave. Subjects were paid via bank transfers.

Figure 13: Distribution of earnings



Appendix A: Invitation letter (signatures are cropped)

DANMARKS STATISTIK

«Navn»
«Coadr»
«Adresse»
«By»
«Post» «Postdist»

Kære «Navn»

Danmarks Statistik og Internet Laboratoriet for Eksperimentel Økonomi (iLEE) ved Økonomisk Institut på Københavns Universitet inviterede dig i maj måned 2008 til at deltage i et eksperiment vedrørende økonomiske beslutningsprocesser. Dette eksperiment gennemførte du, og vi inviterer dig derfor hermed til at deltage i et opfølgende eksperiment.

Din deltagelse er naturligvis frivillig, men vi håber meget, at du igen vil deltage, da det er interessant for os at se, hvordan beslutninger i de to forskellige eksperimenter hænger sammen. Dine beslutninger i eksperimentet bliver behandlet strengt fortroligt og anonymt.

Ved at deltage i eksperimentet får du mulighed for at tjene penge. Vi kan ikke garantere dig, at du vil tjene et bestemt beløb, idet din indtjening vil afhænge af dine egne samt andre deltageres beslutninger. De nærmere regler er beskrevet på hjemmesiden.

For at sikre deltagerne fuld anonymitet logger alle deltagere ind med et tilfældigt udvalgt nummer. For at se detaljerne om eksperimentet, herunder opgaven, tidsforbrug mv., bedes du snarest muligt logge ind på vores hjemmeside:

www.econ.ku.dk/ilee med dit login-nummer: **«finalid_number»**

Hvis du har problemer med at logge ind eller har yderligere spørgsmål, er du velkommen til at kontakte os enten ved at sende en email til **ilee@econ.ku.dk** eller ved at ringe til os på telefon 35 32 44 09.

Med venlig hilsen og på forhånd tak for din hjælp.

Isak Isaksen
Kontorchef, Danmarks Statistik

Jean-Robert Tyran
Professor, Økonomisk Institut

Danmarks Statistik
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2100 København Ø

Tlf. 3917 3917
Fax. 3917 3999
CVR 17-1504-13

dst@dst.dk
www.dst.dk

Appendix B: Reminder letter (signatures are cropped)

«Navn»
«Coadr»
«Adresse»
«By»
«Post» «Postdist»

Kære «Navn»

Danmarks Statistik og Internet Laboratoriet for Eksperimentel Økonomi (iLEE) ved Økonomisk Institut på Københavns Universitet inviterede dig for godt to uger siden til at deltage i et eksperiment vedrørende økonomiske beslutningsprocesser. Du blev inviteret, fordi du i maj måned 2008 gennemførte et lignende eksperiment. Din deltagelse er værdifuld for os, da det er interessant for os at se, hvordan beslutninger i de to forskellige eksperimenter hænger sammen.

Eksperimentet er åbent til og med søndag d. 19. juli, så alle får mulighed for at gennemføre. Hvis du ikke har logget ind endnu, håber vi, at du vil vælge at gøre det nu. Hvis du allerede har påbegyndt eksperimentet, vil du fortsætte, hvor du slap, når du logger ind igen.

Enkelte dage i perioden vil hjemmesiden være utilgængelig pga. flytning af vores server. Prøv i givet fald igen på et andet tidspunkt.

For at se detaljerne om eksperimentet, herunder tidsforbrug, indtjeningsvilkår mv., bedes du snarest muligt logge ind på vores hjemmeside:

www.econ.ku.dk/ilee med dit login-nummer: **«finalid_number»**

Vi håber, at du vælger at gennemføre eksperimentet. Hvis du har problemer med at logge ind eller har yderligere spørgsmål, er du velkommen til at kontakte os enten ved at sende en email til **ilee@econ.ku.dk** eller ved at ringe til os på telefon 35 32 44 09 på onsdage mellem 14 og 15.

Med venlig hilsen og på forhånd tak for din hjælp.

Isak Isaksen
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