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Using Conjoint Survey Methods to Understand Parent Preferences and Decision Making about Early Childhood Education and Care Services



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Outline of Today's Talk

1. Background - why should we care about parents as ECEC consumers?
 1. Problems with studying parents as ECEC consumers
2. The goals of the current projects
3. Introduction to conjoint analysis
 1. Conjoint analysis as a solution to methodological problems
4. Merging methods: Conjoint and other methodologies
 1. Latent profile analysis
 2. Information effects on ECEC preferences: an experimental approach
 3. Comparison between qualitative and quasi-behavioral findings
5. Conclusions and Implications



Background & History

- A large proportion of young children spend significant amounts of time in Early Childhood Education and Care (ECEC) settings
- ECEC refers to child care centres and licensed/unlicensed home child care
- The quality of the care children receive matters, especially for children from low SES backgrounds
- Parents make key decisions about ECEC services but their children are the recipients of the care



Background & History

- Research shows that parents have gaps in their knowledge of their children's ECEC services. For example:
 - Parents' assessments of provider quality are very positively skewed (Zellman and Perlman, 2006)
 - Their assessments of provider quality are not related to objective measures of quality (Perlman, Zellman, Gulyas & Falenchuk, in prep)
 - Many more parents report that their children are in licensed home child care than is possible (Varmuza, Perlman & White, 2019)



Background & History

- Why might parents be misinformed consumers of ECEC?
 - Good quality care is hard to “see”
 - Parents have limited interactions with providers (e.g., 63 seconds at drop off, Perlman and Fletcher, 2012)
 - Reporting bias due to cognitive dissonance – especially given constraints in terms of costs and availability
- All of this makes it very hard for parents to accurately assess their ECEC provider and report on their ECEC preferences.
- It also makes it hard to do research in this area - simply asking parents about their ECEC service doesn't necessarily yield very accurate information



Project Goals

1. To test the utility of methods used in other disciplines to understand parent experiences and preferences around ECEC
2. To improve our understanding of how parents make decisions about ECEC

To achieve these goals, we met with researchers from other disciplines. We had the good fortune to meet Delaine Hampton, a marketing professor at ROTMAN, who introduced us to conjoint survey methodology

What is Conjoint Analysis?

Delaine Hampton





The Basic Premise

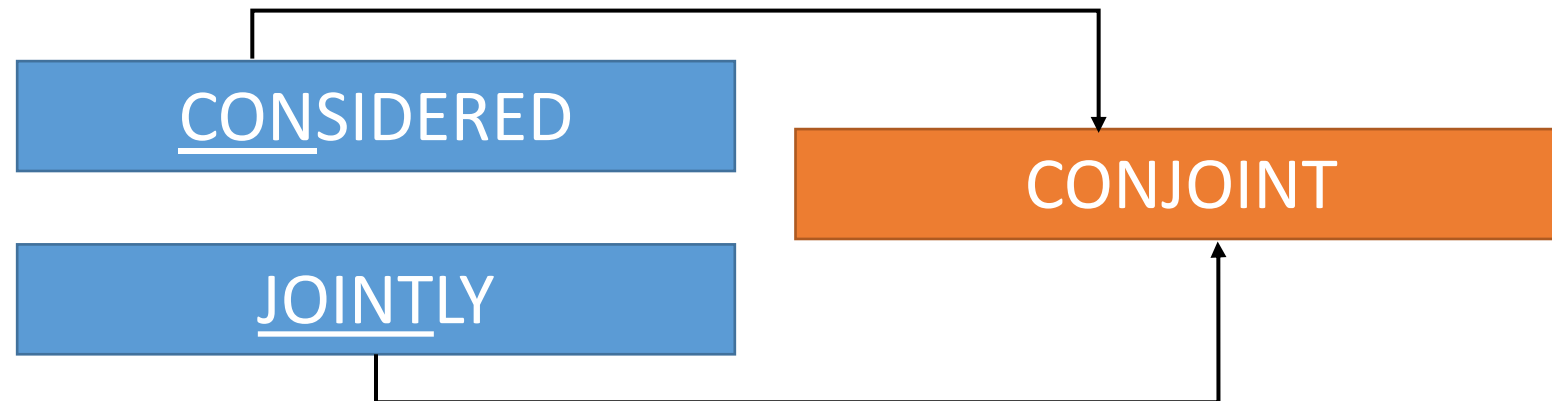
Our overall assessment of a product or service can be understood as the **sum** of the value or worth of each of the component parts of that product or service



Total Utility of Child Care =
Utility of The Physical Environment +
Utility of the Warmth of the Provider
+ Utility of The Location + At This Price of
\$2000/month

Conjoint Research and Analysis

- Explores how customers value different features of their products or services
- Decomposes the product into a set of attributes that add up to overall value of the product





How Does Conjoint Differ from Other Methods?

- Reveals the preferences through choice behavior
- Does not use stated attitudes to determine value
- Creates a model for each respondent
- Shows how people trade-off one feature for another when they can't have everything



A Simple Illustration

Our ECEC Project sets up the premise that parents choose their daycare provider based on the tradeoffs among 8 key factors.

This includes licensed or not, home setting or center, the type of physical environment, hours of operation and so on.

This design gets complex so before we dive into the ECEC study, we will give you a simple illustration of how conjoint works.

You Just Won 5 Days at a Muskoka Resort “Luxury at the Lake”

IMAGINE

As your reward for exceptional valor during the time of COVID, OISE has partnered with a “Luxury at the Lake” resort on Muskoka Lake to provide each one of you a 5- day vacation.

Each person can select a package worth \$4000.00 using different choices of rooms, meal plans and activities.

To help the resort plan the inventory of rooms, dining and activities we are asking each of you to do a conjoint exercise.

Room Options - Attribute 1 with 3 Levels



Meal Plans - Attribute 2 with 4 Levels

Meal Plan 1



3 meals a day
No alcohol

Meal Plan 2



3 meals a day
With alcohol

Meal Plan 3



2 meals a day
With dinner alcohol

Meal Plan 4



2 meals a day
No alcohol

Activity Packages – Attribute 3 with 3 Levels



Three 18-hole rounds of golf



Three specialty spa treatments



Three exciting local excursions

If these were the only options available to you for your Muskoka vacation prize, which one would you choose?

A	
Room	Standard
Meal Plan	3 meals with drinks
Activity	3 Specialty Spa
Spending	\$200

B	
Room	Standard
Meal Plan	3 meals with no drinks
Activity	3 rounds Golf
Spending	\$400

C	
Room	Junior Suite
Meal Plan	2 meals with drinks
Activity	Local Tours
Spending	\$400

If these were the only options available to you for your Muskoka vacation prize, which one would you choose?

A	
Room	Executive Suite
Meal Plan	3 meals with drinks
Activity	Local Tours
Spending	\$200

B	
Room	Executive Suite
Meal Plan	2 meals with no drinks
Activity	3 Spa Treatments
Spending	\$25

C	
Room	Junior Suite
Meal Plan	2 meals with drinks
Activity	Golf
Spending	\$475



After you did 10 Choice Sets like these two, we would be able to estimate the following for you:

- The "part-worth utility" you assign to each room type, each meal plan and each activity package.
- We could then assign an overall Utility or Worth to any combination of features.
- Overall, we could decide what was most important to your choices; room type or meal plan or activity – this is known as attribute importance and describes the extent to which each attribute contributed to your choice
- We could add up the utilities for all respondents for each of the packages offered and estimate how many people would choose each one.

Resulting Utilities* for 3 Respondents with Different Utility Patterns

Attribute and Levels	Respondent 1 Utilities Compromise for Golf	Respondent 2 Utilities Big Room and Dining	Respondent 3 Utilities Healthy Spa – no Alcohol
Room Type			
Standard	-10	-60	30
Junior Suite	+40	10	-5
Executive Suite	-30	+50	-20
Meal Plan			
3/day plus drinks	+10	+20	-50
3/day no drinks	-20	-10	+40
2/ day plus drinks	+40	+50	-15
2/day no drinks	-30	-60	+15
Package			
Golf	+100	+10	-60
Spa	-20	+15	+50
Tour	-80	-25	+10

*Results are for illustrative purposes



Estimating the “Utility” of any package for Respondent 1

Standard room, 3 meals + drinks and Golf = $(-10) + (+10) + (+100) = 100$

Junior Suite, 2 meals, no drinks and Golf = $(+40) + (-30) + 100 = 110$

Where The Conjoint Method is Valuable

Pricing Research :

Determines how much people are really willing to pay for upgraded product features. (especially when values are implied)

- Organic Produce
- Environmentally Friendly
- Similarities with childcare?





Where The Conjoint Method is Valuable

- Efficient Design of Products with Many Attributes:
- People are overwhelmed by too many choices. They develop short cuts for making these choices that are based on their own “utilities”
- For example, Laundry Detergent

Technology	Bleaching, stain removal, wrinkle reduction, fabric life
Form	Powder vs liquid vs tablet
Brand	Tide vs Sunlight vs Gain vs Presidents Choice
Size	5 liters vs 2 liters or 60 tablets versus 30 tablets
Scent	Outdoor scent vs fragrance free vs floral scent vs lavender



Understanding Trade-offs in Different Situations

In the world of consumer goods:

- New competitors come on the scene
- The price of products goes up because of supply problems
- There are dramatic changes in consumer habits due to COVID-19

Governments could really use a powerful forecasting tool for developing policy options. Can run many, many experiments on how people might react to different options.



Over to Adrienne

How the conjoint method was used to explore ECEC choices and reveal the underlying importance of different aspects of the choices.

Using Conjoint Analysis in ECEC Research

Adrienne Davidson





The ECEC Research

I will describe the whole ECEC research process:

1. How attributes and levels were selected for this study.
2. Create different combinations of attributes to show respondents
3. How respondents were grouped into segments with similar attribute utilities.
4. Analysis of what attributes and features had the biggest influence on their selections. These segments are called latent profiles.

They are “latent” because they are revealed by the similarity of choice behaviours. They are not anticipated by any characteristics going into the study.

ECEC Attributes

1. Centre vs Home
2. Cost
3. Location
4. Caregiver Training/Education
5. Physical space
6. Caregiver Interaction
7. Flexibility
8. Full/Part Time



\$\$\$

\$



Our Survey: Attributes and Levels

Type | Licensed child care centre
Licensed home child care
Unlicensed home child care

Physical Space | Is spacious and full of light
Is reasonably sized and moderately well lit
Is small and dimly lit

Cost | Low
Medium
High

Interactions | Caregiver supervises my child
Caregiver plays with my child
Caregiver engages my child in play and learning

Location | A 5-14 minute commute from home/work
A 15-29 minute commute from home/work
A 30-40 minute commute from home/work

Flexibility | Hours are fixed (8am – 6pm), Monday - Friday
Hours are flexible before 8am and after 6pm,
Monday - Friday
Hours are flexible before 8am and after 6pm,
weekend care available

Training | No formal training in ECE
Some formal training in ECE
College or university degree in early
childhood education

Hours | Full time care only
Part time or full time care
Part time care only

Our Survey

Three different providers have called to offer you a spot for your youngest child. You need to make a decision today, otherwise you will lose the options being offered to you.

If these were your options, which would you choose?

(1 of 12)

	Provider 1	Provider 2	Provider 3
Cost	\$70/day	\$57/day	\$67/day
Flexibility	Hours are flexible before 8am and after 6pm, weekend care available	Hours are flexible before 8am and after 6pm, Monday - Friday	Hours are fixed (8am - 6pm), Monday - Friday
Location	A 30-40 minute commute from home/work	A 30-40 minute commute from home/work	A 5-14 minute commute from home/work
Full/Part Time	Part time care only	Full time care only	Part time or full time care
Type	Licensed home child care	Licensed home child care	Unlicensed home child care
	<input type="button" value="Select"/>	<input type="button" value="Select"/>	<input type="button" value="Select"/>
None			
I would rather go without child care than choose one of these providers.			
<input type="button" value="Select"/>			

Our Survey

Three different providers have called to offer you a spot for your youngest child. You need to make a decision today, otherwise you will lose the options being offered to you.

If these were your options, which would you choose?

(10 of 12)

	Provider 1	Provider 2	Provider 3
Cost	\$70/day	\$67/day	\$105/day
Caregiver Interactions	Caregiver supervises my child	Caregiver plays with my child	Caregiver engages my child in play and learning
Location	A 30-40 minute commute from home/work	A 15-29 minute commute from home/work	A 15-29 minute commute from home/work
Full/Part Time	Full time care only	Part time or full time care	Full time care only
Type	Licensed child care centre	Unlicensed home child care	Licensed child care centre
	<input type="button" value="Select"/>	<input type="button" value="Select"/>	<input type="button" value="Select"/>

None
I would rather go without child care than choose one of these providers.
<input type="button" value="Select"/>

Data Collection & Recruitment

(1) Online Survey

- Link posted on the Children's Services website in partnership with the City of Toronto
- 563 respondents completed the survey in full

(2) EarlyON Centres in low SES neighbourhoods

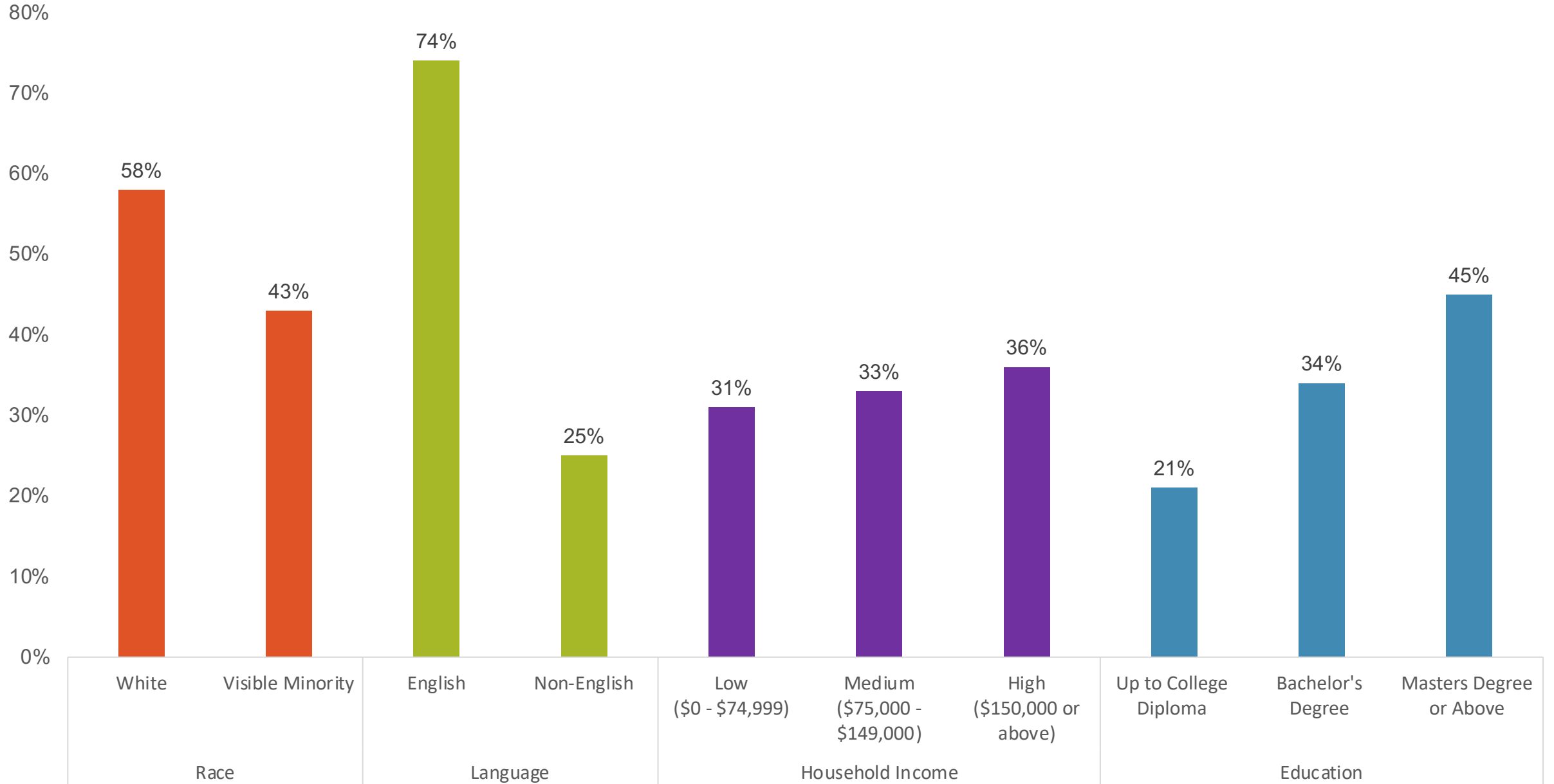
- Conducted on tablets, in partnership with EarlyON Centres in Toronto
- 161 respondents completed the survey in full

*** Thank you to our friends at Children's Services ***



The Survey Sample

Sample Characteristics (N=724)



Conjoint Results

Conjoint Results: Utilities

Attribute of Interest	Levels	Avg. Utilities (Zero-Centered)	SD
Type of Care	Licensed child care centre	58.48	60.35
	Licensed home child care	30.63	21.74
	Unlicensed home child care	-89.10	61.04
Flexibility of Care	Hours are fixed (8am – 6pm), Monday – Friday	-9.09	12.44
	Hours are flexible before 8am and after 6pm, M-F	2.84	9.96
	Hours are flexible before 8am and after 6pm, weekends	6.25	9.22
Caregiver Engagement	Caregiver supervises my child	-59.97	24.98
	Caregiver plays with my child	5.97	10.78
	Caregiver engages my child in play and learning	54.00	26.42

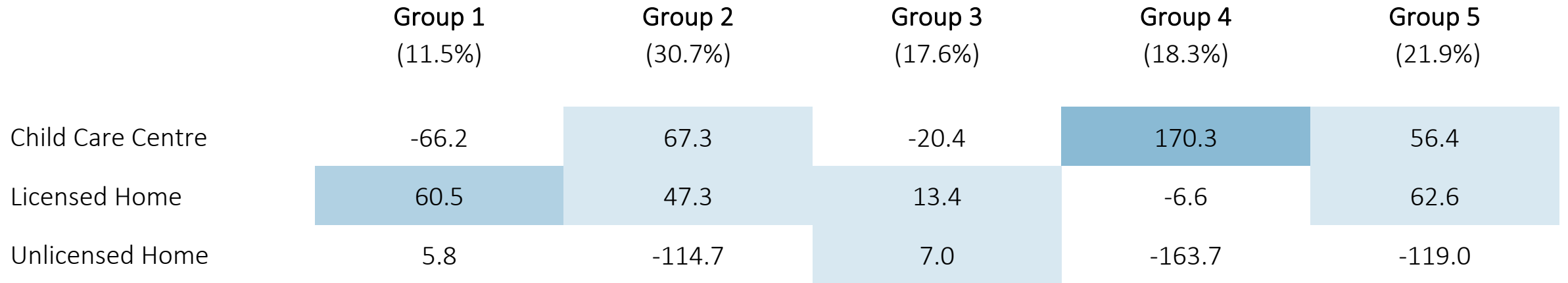
Latent Profile Analysis: *ECEC Decisions Profiles*



Latent Profile Analysis

- Latent Profile Analysis is a statistical technique for identifying subgroups of respondents that cluster together across multiple variables (Lanza & Rhoades, 2014).
- We created Latent Profiles from the utilities generated by the Conjoint Analysis

Latent Profile Analysis

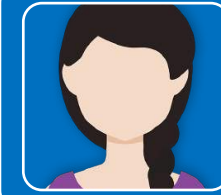


This is how they make their choices between these options – creates different patterns in different groups

For instance, for group 4 it's very important

Profiles

Latent Profiles



Constrained Conscientious Consumers (11%)



Making it Work (31%)



Cozy Care (19%)



Centre Centric (18%)



Quality Conscious (22%)

Constrained Conscientious Consumers (11%)



Training



Licensing
(HCC)



Cost



Full/Part time

Race	South Asian (mostly)
Language	Other
Household Income	Low
Education	Low
Work Schedule	Not full time
Familiarity with CC	Low
Take Any Care	Moderate

Priya

Priya is a young immigrant from India. She works as a personal support worker and doesn't get enough shifts to cover full-time employment. She finds it difficult to understand the Child Care system. Cost of child care is a real factor. But she still cares about quality and wants a licensed provider (center or home) with well trained educators.



“Safety/track record
regulated registered
staff flexible hours
cost”

Making it Work (31%)



Licensing
(Centre*)



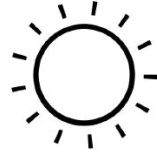
Location



Full/Part time



Training



Bright Space

Race	White
Language	English
Household Income	High
Education	Medium
Familiarity with CC	High
Take Any Care	High

Cheryl

Cheryl grew up in Toronto and understands how the system works. She is a dental hygienist who really needs child care and she is mindful of the distance and hours. She pays attention to structural quality including licensing, educator training and good space. But she doesn't have a strong attachment to either because she knows that she is going to have to take what she can get.

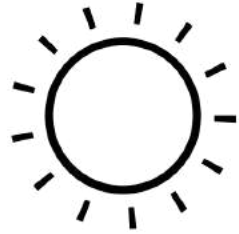


“Training and certification staff; certification of center; reputation and recommendation”

Cozy Care (19%)



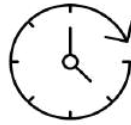
Interactions



Bright Space



Location



Full/Part Time

Race	White
Language	English
Household Income	High
Education	Highest
Work Schedule	Regular
Familiarity with CC	Middle
Take Any Care	High

Lauren

Lauren is a lawyer who is highly educated, highly paid professional. Because she works very hard she is aware of the hours of operation and distance from home of the child care she chooses. She relays wants cozy care in a home setting for her child.



“That the people running the center are quality, engaging individuals who truly love children”

Centre Centric (18%)



Licensing
(Centre)

Race	White
Language	English
Household Income	High
Education	Medium
Familiarity with CC	High
Take Any Care	Very Low

Sharon

Sharon is an older mom who works as a free lance journalist. She wants the most regulated, institutional centre care. She focuses on licensed center care as a proxy for everything else. She knows what is available and is not willing to compromise.



“A licensed setting
with happy, loving
workers”

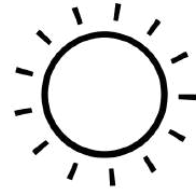
Quality Conscious (22%)



Licensing



Training



Bright Space



Interactions

Race	White
Language	English
Household Income	High
Education	Highest
Familiarity with CC	Medium
Take Any Care	Low

Sahar

Sahar is a paediatrician. She is very busy and doesn't have time to know about all of the child care options that are available in the city. But she is aware of all the complex developmental needs of children and really wants care that is of high quality.



“Licensed, safety, good reviews, healthy food, appropriate learning and development, positive and nurturing environment”

Using Conjoint Analysis along with Experimental Design

Samantha Burns



Information-Based Experiments

- Information-based experiments:
 - Provide participants with information
 - Test the effects of that information on decision-making
- However, there is also evidence that receiving information does not necessarily shift people's attitudes
- In this population, this is particularly important to investigate, given:
 - Findings about information gaps in ECEC (e.g., licensing)
 - The consequences of placing children in sub-optimal ECEC



Project Goals

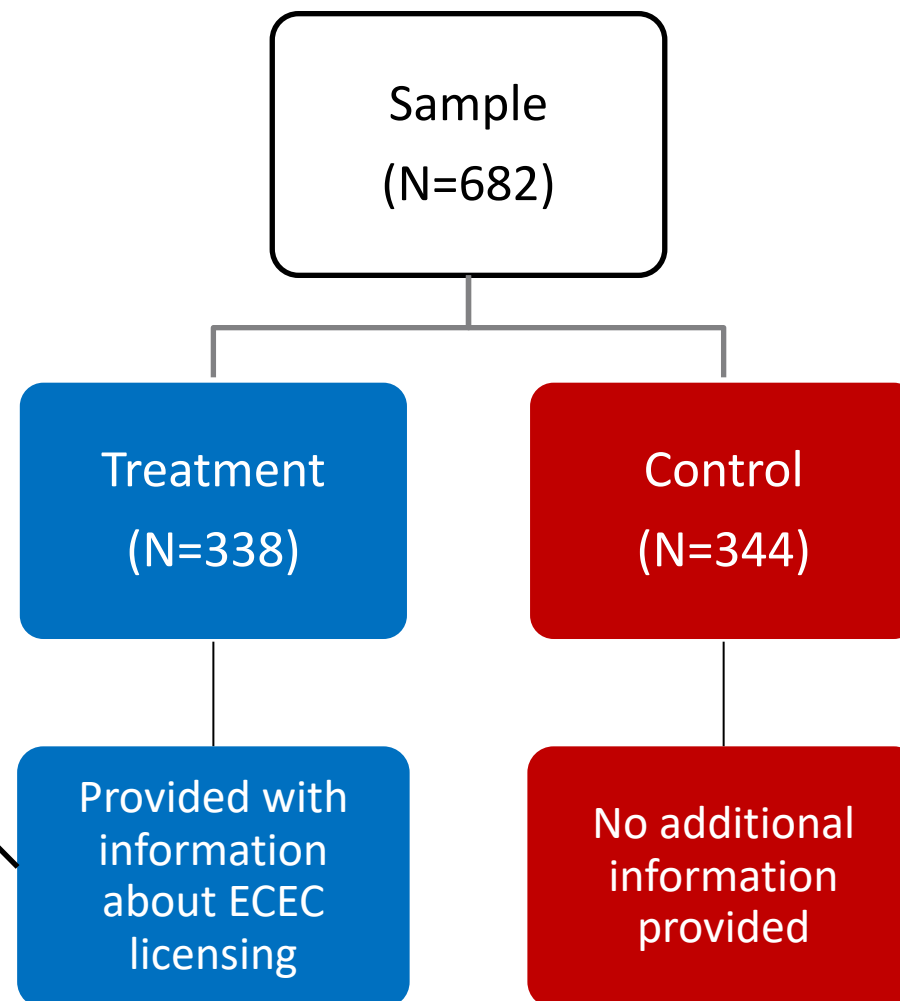
1. To investigate the effects of providing parents with information about childcare licensing on their decision making about ECEC in Toronto
2. To investigate whether the effects of providing parents with information differs based on their demographic characteristics

Experimental Design

Example: Licensed Childcare Centres

All childcare centres are licensed by the Ontario provincial government. In order to get a license, childcare centres must follow specific regulations including:

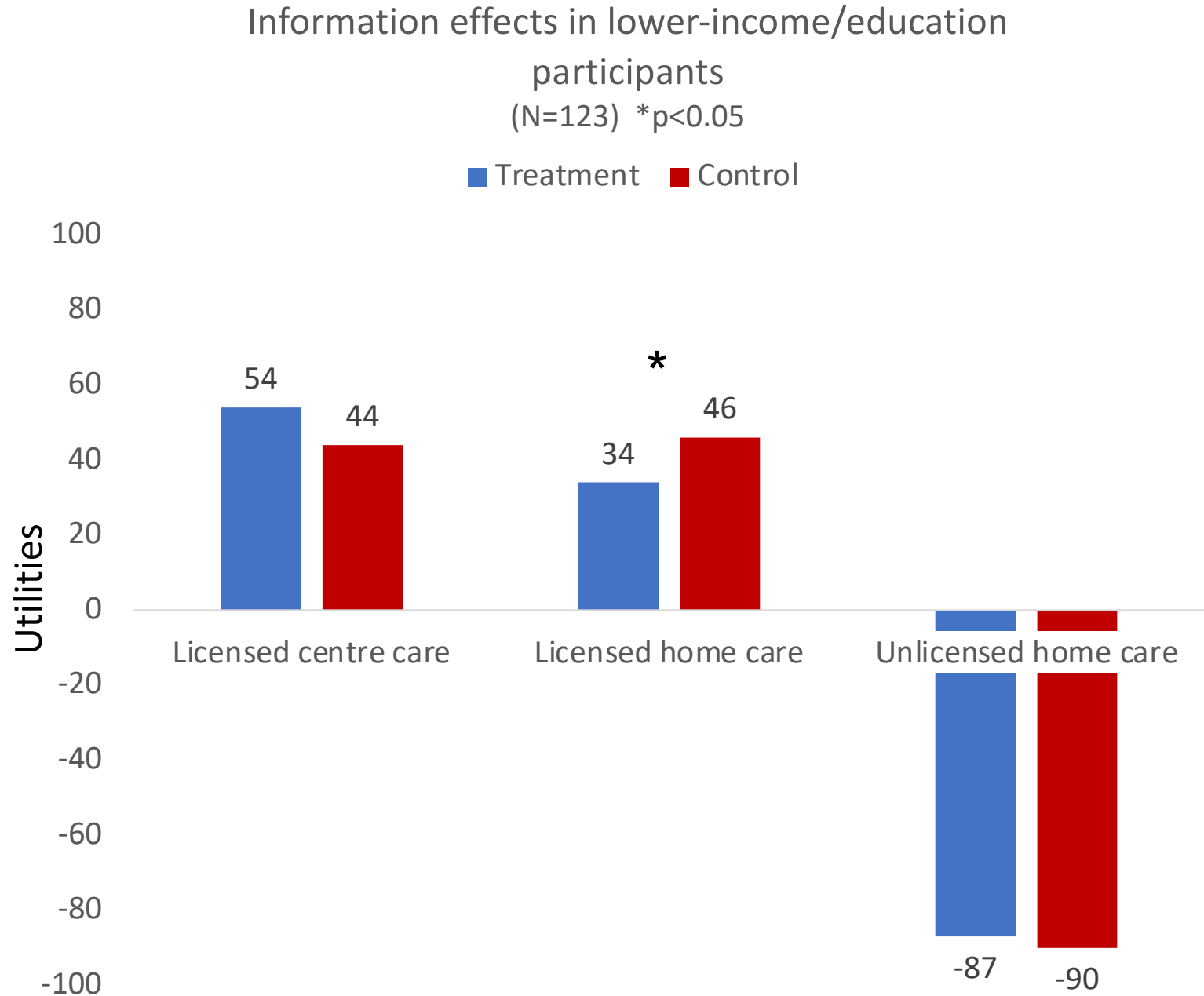
- the number of staff and the number of children
- staff training
- program activities
- certain health and safety standards including maintaining first aid training and police record checks
- allowing government inspections to ensure that they are following provincial regulations



Results:
*Experimental Effects on Parental
Preferences*

Results

- In general, there was no significant effect of providing information on parents' preferences for different types of care
- Across low-income, low education respondents there was a significant difference in preferences for licensed home care
- Across both groups parents don't want unlicensed care



Comparing Conjoint and Qualitative Findings

Sumayya Saleem





Project Goals

1. To investigate the relationship between the attributes that parents **state** in response to open-ended questions about ECEC preferences and the attributes **revealed** to be important in the conjoint analysis
2. To investigate the influence of parent demographic characteristics on the relationship between stated and revealed preferences

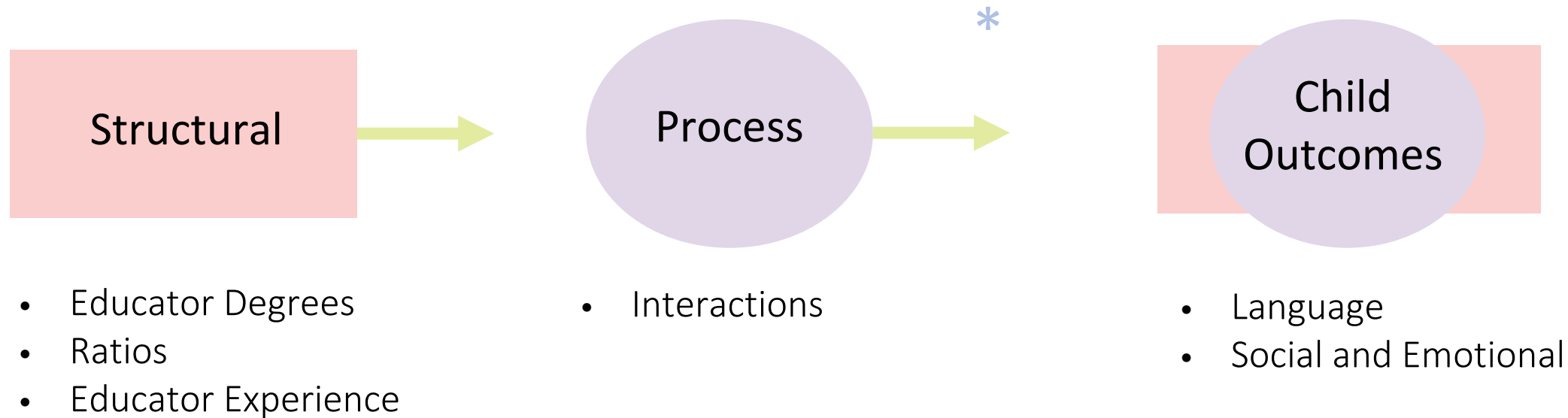


Open-ended Question

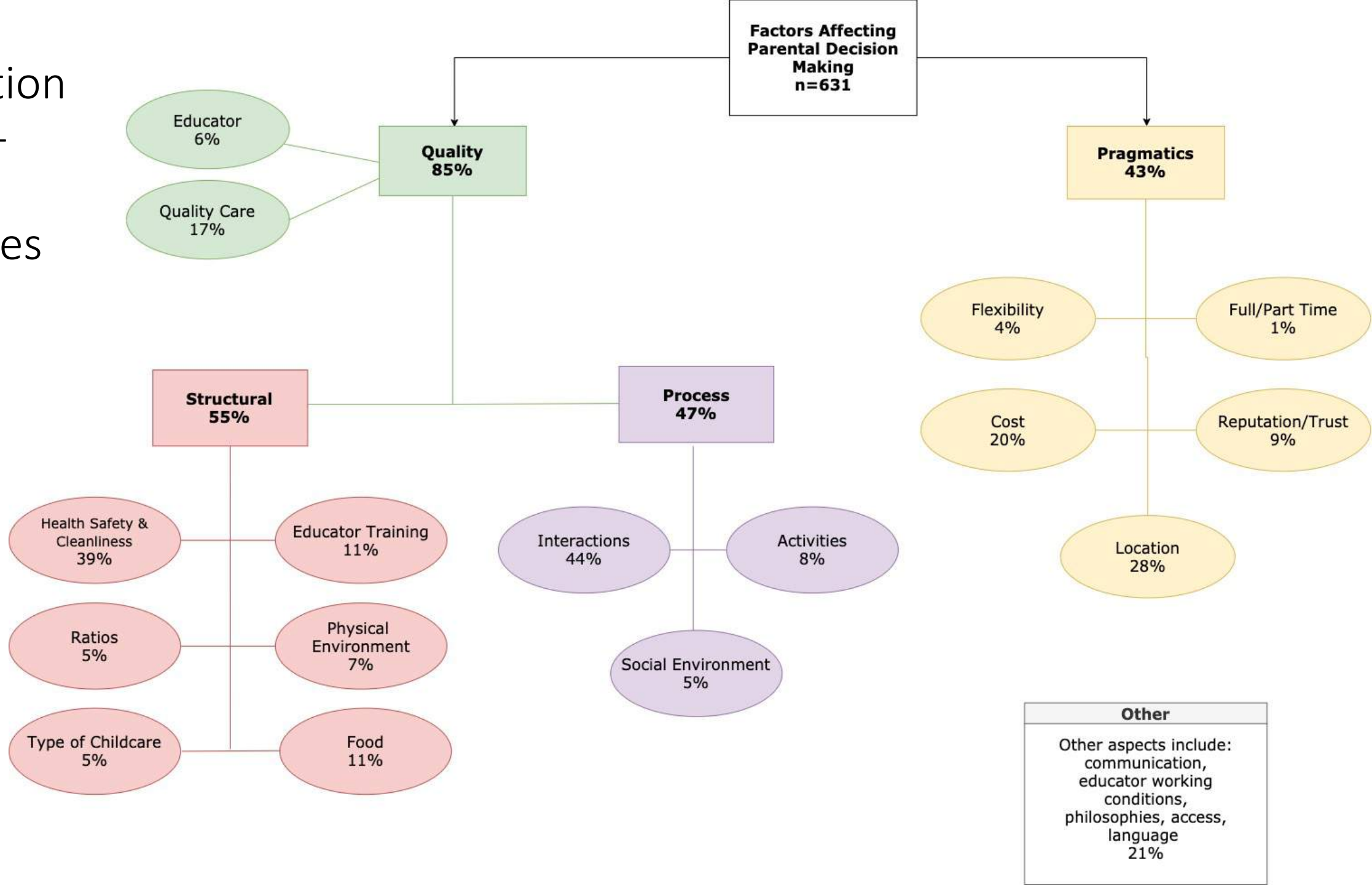
What do you consider to be the most important things to look for when you think about choosing childcare for your youngest child?

- Inductive coding was used to identify 24 themes

Defining Structural and Process Quality



Distribution of Open-Ended Responses



Comparing Attribute Importance to Open-Ended Responses

Attribute	Stated Preference	Mean Attribute Importance
Interactions	45%	13%
Location	28%	13%
Cost	20%	4%
Educator Training	10%	13%
Physical Environment	7%	15%
Type (licensing, centre/home)	5%	21%
Hours (Flexibility)	4%	3%
Full-time Part-time	1%	13%

Results: Pearson Point Biserial Correlation

Attributes (Stated x Revealed)	r_{pb}	Stated by
Stated educator interactions x Importance of interactions	0.183*	45%
Stated location x Importance of location	0.070	28%
Stated cost x Importance of cost	0.092*	20%
Stated educator training x Importance of educator training	0.017	10%
Stated physical environment x Importance of physical space	-0.024	7%
Stated type x Importance of type	0.093*	5%
Stated flexibility x Importance of flexibility	-0.060	4%
Stated full-time part-time x Importance of full-time part-time	0.013	1%



Parent characteristics and the relationship between stated and revealed preferences

- For educator-child interactions, the highest correlations were found for:
 - Parents with high incomes (\$100,000+, $r=0.209$)
 - English speakers ($r=0.195$)
 - Caucasian parents ($r=0.194$).
- For educator training, the correlations between the stated and revealed preferences was:
 - Significantly higher for Caucasian parents ($r=0.114$) compared to Visible Minorities ($r=-0.116$)

Conclusions/Implications

Michal Perlman





Some Preliminary Conclusions about Parents as Consumers of ECEC

- There was substantial heterogeneity in parents' quasi-behavioral decision patterns, we were able to identify distinct groups of parents based on these patterns
- Equity issue coming up across our papers – where the parents whose children could benefit most from good quality care are in the weakest position to secure it for their children
- Overwhelmingly parents prefer LICENSED care



Methodological Advantages

- Advantages of conjoint analysis:
 - Gets around some of the barriers that parents face when responding to traditional surveys
 - Allows us to investigate situations that require complex-decision making
 - Pairs well with different methods to answer a variety of questions
- What each method allows us to learn:
 1. LPA: Deeper insights into what parents' preferences were, and the degree to which they were associated with demographics
 2. Experiment: Informational effects – who can benefit from additional information and the limitations of this approach
 3. Qualitative Comparison: Disconnect between stated and revealed preferences, especially for low-income parents

Next Steps and Further Feedback

- Current Publications:
 - Davidson, A., Burns, S., White, L., Hampton, D., & Perlman, M. (2020). Child care policy and child care burden: Policy feedback effects and distributive implications of regulatory decisions. *Journal of Behavioral Public Administration*, 3(2).
 - Saleem S., Burns, S., Davidson, A., Hampton, D., White, L., & Perlman, M. (provisionally accepted). What do parents want in terms of Early Childhood Education and Care? *Manuscript under review*.
 - Davidson, A., Burns, S., Hampton, D., White, L.A., & Perlman, M., (revised and resubmitted). “Policy Frameworks and Parental Choice: Using Conjoint Analysis to Understand Parental Decision Making Regarding Early Childhood Education and Care (ECEC).”
 - Burns, S., Davidson, A., White, L., Perlman, M., & Hampton, D. Information Effects on Parental Preferences for Early Childhood Education and Care. *Manuscript under review*.
- A few publications in the works:
 - Using the scenario simulation capability of conjoint analysis, we plan to explore other situations of constrained choice
- Analyzing data using conjoint to understand the tradeoffs parents are making regarding ECEC during COVID
- Continue to look for other methods to help us understand parents
 - Using google reviews of ECEC services to test effects of government oversight on concerns anxiety and concerns about risk



Thank you!

- McCain Foundation
- Children's Services, City of Toronto who really facilitated this research
- Staff at the EarlyON Centres
- All the parents who generously gave us their time
- MBA marketing students at Rotman
- Work study students who were involved: Caity, Hillary, Sajee, Ava