

WEBVTT

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Henry Chao: Alright guys, thank you for tuning in to the podcast or I will be presenting to you what i've been working on the summer.

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Henry Chao: My name is Henry chow and I am a senior at stony brook university majoring in pure and applied math.

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Henry Chao: i've done this summer retreat research at the ultra you program led by Professor Christophe to share, which focuses on teaching students, how to create and use computational model.

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Henry Chao: The title of my project is online grocery shopping a staple of the present and maybe the future, the research focuses on the sharp rise of online food ordering during the code pen Devon.

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Henry Chao: I want to learn about how much online food shopping has increased during the pandemic, who is doing it, and whether it's here to stay or not, but more on that later right now i'm joined by my wonderful mentor for all my work this summer gabby Abu zaid.

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Henry Chao: Thank you so much for joining me today gabby I really appreciate it.

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Gabby Abou-Zeid (she/her): You know, of course.

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Henry Chao: gabby's worked a lot with this data on the main project, so I wanted to let gabby get a chance to introduce the data and the project so i'm just gonna ask Would you mind giving

me a brief introduction to the team that created and lead the data collection collection and research.

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Gabby Abou-Zeid (she/her): yeah absolutely so my name is is gabby I was that, as you said, I am a master student civil environment and laugh i'm gonna start over i'm.

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Gabby Abou-Zeid (she/her): Sure thing, so my name is gabby I please add, as you said, I am a master student and civil and environmental engineering at portland State University.

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Gabby Abou-Zeid (she/her): And the research is being led out of portland State University by Dr Kelly clifton and includes co principal investigator is Dr Christina currents, who is at the University of Arizona.

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Gabby Abou-Zeid (she/her): As well as amanda how and Dr Rebecca Lewis, who are associated with the University of Oregon and the research is being funded by both by National Science Foundation and the National Institute for transportation and communities.

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Henry Chao: cool cool cool so I guess, this brings about the question with all these people Why was this data collected, why was it funded and what are the main goals of the project that you want to see.

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Gabby Abou-Zeid (she/her): yeah so the the study goals here we're really multifaceted, I think, as you kind of mentioned the impetus for the project with that.

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Gabby Abou-Zeid (she/her): we're observing this huge growth in the grocery industry as a result of the pandemic, where he grocery is kind of this next frontier and the expansion of E commerce.

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Gabby Abou-Zeid (she/her): And we knew that many people were going through these unique and disruptive experiences in their everyday lives during the pandemic.

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Gabby Abou-Zeid (she/her): And so the project really sought out to understand how are people accessing groceries during the pandemic and to what extent are the grocery services being used and adopted.

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Gabby Abou-Zeid (she/her): or the grocery services is ordering your groceries online for delivery or for pickup at a local store.

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Gabby Abou-Zeid (she/her): And so there are all these nuanced implications for our transportation systems should the use of the grocery and E commerce continue to expand.

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Gabby Abou-Zeid (she/her): And so the project also aims to determine how sticky are the behavioral changes involving the grocery shopping during the pandemic.

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Gabby Abou-Zeid (she/her): or, in other words, what is the likelihood that people will continue to use these services, at the same or it heightens levels, even after the pandemic.

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Gabby Abou-Zeid (she/her): And then intertwined with all of this is that we wanted to understand what barriers that people face and accessing a central goods.

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Gabby Abou-Zeid (she/her): And what barriers exist in using the grocery services themselves these services has kind of been touted as a safer shopping option during the pandemic because they limit exposure to other people.

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Gabby Abou-Zeid (she/her): But costs knowledge of the technology and availability of the grocery services may hinder particularly vulnerable populations from actually reaping the benefits of having their groceries delivered or picked up.

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Henry Chao: very, very interesting and yeah i'll definitely be getting into some of that stuff later when I go through my results, but I guess my next question would be.

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Henry Chao: How is the survey administered so just to give some background, it was an online survey through call tricks.

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Henry Chao: But what types of questions would you favor on the survey, there were a lot of questions, but if you were to give a summary of the types of questions that were there, what would you say.

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Gabby Abou-Zeid (she/her): yeah, so I would say kind of the main themes of questions that we asked were about household socio demographics composition and household three sources so, for example, what is the household income, how many cars is the household have.

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Gabby Abou-Zeid (she/her): We also asked about grass grocery shopping preferences and behaviors including shopping online.

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Gabby Abou-Zeid (she/her): As well as about barriers to access to food, during this time, and what impacts those barriers had on the household so we asked a couple questions about food insecurity and about how prepared people felt to go through another disaster after having gone through the pandemic.

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Henry Chao: Great great so I guess my last question would be.

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Henry Chao: So and we're going to get more into this later, but the data is broken down into two ways, one of them was taken during the fall of 2020 and one was taken in the winter of 2021 so not too far apart.

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Henry Chao: But some of the survey mechanisms were a little bit different there and I was just wondering if you could elaborate on the differences between the wave one and wave two data.

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Gabby Abou-Zeid (she/her): yeah absolutely, and so the main difference between the two ways of data.

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Gabby Abou-Zeid (she/her): Is that we've mostly focused largely on shopping across different use cases so in their transportation and planning world this concept of land use is sort of loosely related to zoning.

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Gabby Abou-Zeid (she/her): And it simply describes the purpose or the use of a given development so, for example, a single family developments are an example of a land use, supermarkets represent a land use, while Convenience Stores represent another.

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Gabby Abou-Zeid (she/her): And so, when we've mostly we really dug into shopping behaviors across these various land uses.

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Gabby Abou-Zeid (she/her): And we've mostly we actually focus more on the adoption and usage, the grocery services, specifically, we were able to home in on when the first time use of these services was so before or after the onset of the pandemic.

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Gabby Abou-Zeid (she/her): And we also asked about a larger suite of attitudes regarding grocery shopping people's comfort with shopping online.

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Gabby Abou-Zeid (she/her): and satisfaction with in store and online shopping experiences and we have to it was also kind of just after vaccinations are beginning to roll out so we were able to ask people about vaccination status and how that related to their grocery shopping behaviors.

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Henry Chao: Great great yeah definitely i'm sure people who are listening will remember when they got vaccinated and you'll you'll be able to make some connections, as to how that affects the data and not.

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Henry Chao: On baby for introducing the term land use, that is something that will continue to be using throughout this podcast but yeah that's about it, thank you so much for taking the time and it was great to have you on this podcast.

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Gabby Abou-Zeid (she/her): Absolutely happy to participate and really interested in hearing more about your results and the analysis that you did.

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Great.

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Henry Chao: So now, I want to get into the primary research questions I had on this project, the first, which is pretty direct how much has been done to help online grocery shopping grow.

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Henry Chao: So before even getting my own research into the data that I have, I wanted to look at other articles to see how online shopping in general has evolved.

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Henry Chao: anecdotally I noticed me my family, friends, all going on Amazon ordering takeout more so, I just wanted to see how these businesses have grown during the pandemic and unsurprisingly.

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Henry Chao: According to market watch calm the overall revenue a food delivery Apps like grub hub door dash uber eats etc.

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Henry Chao: more than doubled from spring and summer 2019 compared to that period in 2020 and according to the New York Times amazon's profits increase 220%.

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Henry Chao: From 2020 quarter one to 2021 quarter two are two totally 21 quarter one as well, so across the same time period.

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Henry Chao: And, according to the supermarket news, ie grocery share of the market went up from 3.4% to 10.2% from 2019 to 2020 so especially comparing the early part of the pandemic it's really clear to see that everything sort of shot up in value so that even digging too deep.

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Henry Chao: it's pretty clear that the stay at home orders are probably what's causing this as sure we can say that from our own experiences.

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Henry Chao: So then diving into our data, we also definitely found some clear evidence that online grocery shopping was increasing popularity.

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Henry Chao: One of our questions for a wave one respondents which by the way, is about 4500 people I don't know if we mentioned that yet.

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Henry Chao: i'm asked how much they ordered groceries online compared to February of 2020 and started epidemic and 40% responded more often and only 23% responded have not done this.

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Henry Chao: and similarly with restaurants 39 37% of people said they're ordering restaurants, he got more often and 32% of people were getting food and items delivered more often.

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Henry Chao: And I think one of the most important questions we have some things we learned from the survey is that abo

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Henry Chao: The next question for me, was what groups of people are more likely to shop for these groceries online and, in particular, how to people's experiences with covert affect how they shot.

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Henry Chao: So, in order to tackle this question I use a statistical model, known as a link class model now in broad terms, the goal of a leading class model is to find hidden quote unquote latent variable.

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Henry Chao: by looking at a large subset of variables that you input, so in this case I fed the model, a bunch of variables that I felt represented people's experiences coded so These include what their their household had or is vulnerable to coven.

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Henry Chao: Whether they were working from home due to coven whether a person's household had a decrease in income due to code.

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Henry Chao: Whether they were laid off from their job they had concerns about whether they would lose their housing and there were a couple more, but these are primarily what I inputted.

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Henry Chao: And then, when the model assess all this data it actually broke it up into three different classes.

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Henry Chao: So one of these classes had a large share of people who were laid off concerned about losing their housing, if I had to pick the defining characteristic of this class.



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Henry Chao: It would probably be that 85% of the people who responded said they had a decrease in income due to code so as such i'm going to label this class those who are financially affected by coded.

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Henry Chao: The next class featured a really, really high density of people who were directly affected by the virus itself.

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Henry Chao: Almost 30% of the people had themselves or someone in their household contract code and most of the ones that didn't said they had people near to them, who are vulnerable.

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Henry Chao: Additionally, this class had by far the highest year of people who are now working from home about 73%.

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Henry Chao: So that's this class I dug something long's of their well being was jeopardize my co video it was for health reasons.

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Henry Chao: That they are put in this class and then the last class sort of was just the opposite of the first who.

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Henry Chao: Maybe we're minimally affected in any sort of way they weren't losing income their family wasn't affected, they just had to.

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Henry Chao: stay at home that was the main thing they didn't have the highest share thing at home, but if they were to have anything that they were just working from home like.

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Henry Chao: i'm sure many of you guys listening so now ever three classes financially affected medically affected and minimally affected.

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Henry Chao: So let's just look at how people shopping empties varied along these classes, so I think one of the most notable statistics is that 47% of people who had households medically affected by code.

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Henry Chao: said they tried to online ordering of groceries for the first time after the pandemic compared to about 28% of the not affected class and we saw that people will financially affected by code.

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Henry Chao: averaged about one more in person shopping trip.

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Henry Chao: Then those from the other classes and that's per month, so those who are very financially affected when in person at the store 5.5 times a month on average.

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Henry Chao: And that's compared to 4.5 for the other two classes, so I think it's pretty clear that the health concerns, as well as other concerns, namely financial definitely affected people shopping decisions, a lot during the pandemic.

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Henry Chao: This brings me to my next question which goes something like this say we have a person who's close family member or selves have contracted coven sometime during the pandemic.

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Henry Chao: As a result, they started shopping online how likely, are they to continue shopping online, even after the academic is over, and they can go to the supermarket again.

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Henry Chao: So this subject to study the team dub it stickiness stickiness of online shoot for three jumping someone does it, but what is a chance that they will stick after the pandemic.

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Henry Chao: So to study this I utilize the wave to data which you may recall us from winter of 2021.

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Henry Chao: Just now, realizing that might be confusing so let's just say the collection of it started in January of 2012.

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Henry Chao: which, if I recall correctly what's around the peak of the coven pandemic in terms of cases in America, because I was right before the vaccine.

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Henry Chao: um I ran a very similarly in class model for the way to data as the wave one and I got similar results.

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Henry Chao: Instead of asking for three classes, though I asked her for classes in this model and the reason for this is that the wave to data contains slightly different data different questions are asked.

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Henry Chao: And there's a fourth class because we gave more options for people to say something like a real them or they're not sure.

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Henry Chao: And it turns out that you know, the people who got laid off also couldn't or people who couldn't get laid off because they were unemployed also kind of had a decrease in income so.

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Henry Chao: People would answer not sure or not applicable to everything because it won't apply to them so there's a large class of people who replied not applicable so we're not really going to worry about that one.

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Henry Chao: Because the important thing is that other input a data with slightly different we did get three output clay cases.

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Henry Chao: That were relatively the same as before, we have our financially affect the group, we have a medically effective group and we have our not are minimally effective group.

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Henry Chao: So now, I want to talk about how we measure stickiness, how can we actually manifest this in our data and stickiness variable that we created.

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Henry Chao: It combined two important responses, one of them was how they started ordering online more since the start of the pandemic, which I think it's pretty intuitive.

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Henry Chao: into why that's considered and then the other one is also pretty intuitive the question as a year from today, being the day that they were asked the question.

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Henry Chao: Did they anticipate shopping online more or the same since they were shopping at the moment, so they said that they are going to shop more the same.

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Henry Chao: And they ordered online more started the pandemic that would be enough to label them as sticky and there is also we get when we look across the classes are the financially affected class.

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Henry Chao: This is 24% sticky the medically affected class is 33% sticky and the not affected class is 28% sticky according their responses.

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Henry Chao: So, going back to the research question at the beginning of the segment, it does seem like there is a decent chunk of people.

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Henry Chao: who may have had to start shopping online do the necessity, but will actually retain it due to its convenience, so perhaps and just perhaps the coven pandemic will be sort of an impetus to a more lasting change and how we obtain our groceries um yeah okay.

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Henry Chao: So yeah I think that just about conclude their discussion here on this podcast.

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Henry Chao: If there's some conclusion to draw I think it's the cove it has definitely helped the nisha online grocery shopping grow.

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Henry Chao: But it's it enough to bring about the demise of in store shopping I would wager it's probably not, at least for a long time.

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Henry Chao: um but right now we've three data it's actually currently being collected and processed, so there is so much more work to do in terms of analyzing this data.

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Henry Chao: And it's a really exciting project, so I hope it turns out well and hopefully you guys can find out more about it in the future so yeah thanks for listening.