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Exploring best practices in packaging design for online shopping

Dr. Li

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For my daughter who came into the world during my time at the University of Leeds, school of Design.
Amelia Elizabeth Thandie Brown

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Abstract

Background:

We are living in a time where you can buy pretty much anything online and have it delivered to your home. The only problem, we have to leave our homes sometime. When you're away and something needs to be delivered we have to find an alternative solution. This is how the concept of Click & Collect was born. Teamed with the need for a sustainable packaging type motivated by pressures from the media and a need to make it easier for you to carry your shopping home. This research project is interested in developing a type of packaging that can meet these needs to design something of interest to the target users of internet shoppers in 2017.

Objective:

To design a packaging type that is user friendly, easy to carry and visually appealing that can handle multiple purchases and promote sustainability to a varied target audience.

Methods:

The research explores user centred design techniques of literature review, questionnaire, prototyping, observations, market research and usability testing to find the best approach to develop a packaging type for eCommerce shopping in 2017. Exploring the varied target audience of internet shoppers to exercise branding strategies and research user preferences to design and develop an appealing packaging type.

Conclusion:

The development of a packaging system that can meet all requirements set out in the objectives was realised by undertaking user centred design methods. The packaging developed relays to the target audience the notion of sustainability by still preserving the primary function of a packaging type which is to protect the contents.

1: Introduction

1.1: Background:

Visitor numbers to Britain's high streets are falling (Wood, 2016), eCommerce is becoming the preferred method of shopping with 77% of web users making purchases online (Twenga, 2016). Customers now order online, either having a purchase delivered to their home, the office or opting to click & collect from an alternative location. With sales set to see £6.5bn for click & collect in the UK alone by 2019 (Butler, 2014). Click & collect is fast becoming the preferred delivery method.

The internet has brought an infinite amount of products from the computer to our homes. Once limited to the range of products a store could stock, with the emergence of click & collect shopping it has enabled shoppers to collect an obscure array of produce from just one location.

We live in a world of wanting everything instantly and we are slowly becoming aware of the inevitable damage that is being caused to the environment as a consequence. Everything has packaging which would usually get put to landfill, in turn harming the environment. Through government legislation and media presence a consciousness is forming that something needs to be done, fast.

With these points in mind, can we design a type of packaging for online shopping trends that is convenient, holds a variety of products whilst satisfying the growing need for sustainability?

1.2: Project aim:

The project aims to design a packaging type to benefit eCommerce shopping in accordance with user centred design techniques and current trends in shopping practices.

1.3: Objectives:

1. Review literature on User centred design practices, Packaging Design and Online shopping habits.
2. Conduct questionnaires regarding user preferences for packaging design.
3. Identify need for packaging type to be developed for ecommerce shopping.
4. Collect samples of existing packaging.
5. Conduct observations of locations along the shopping journey to gain insights into various stakeholder needs.
6. Develop prototypes for eCommerce packaging.
7. Develop instructions to help the user understand how to use the designed packaging.
8. Conduct usability testing of proposed packaging design.
9. Iterate changes suggested from usability testing.
10. Conduct final usability testing to evaluate changes made.

1.4: Research question

What are the best practices in designing packaging for ecommerce?

1.5: Project development

The current problem associated with packaging was first uncovered by the researcher being brought to attention through UK media channels, namely a BBC documentary War on Waste (BBC, 2016). This outlined a problem of online shopping developing problems with over packaging produce. The problem being that online shopping is becoming increasingly popular, yet we receive most purchases packaged separately contributing to a large amount of waste. Literature review was studied which uncovered an understanding by the general public that sustainability in packaging was favourable yet there is little control from the consumer on how their packages are delivered. It was decided that it would be possible to develop a universal, reusable, recyclable shopping cart which could deliver multiple purchases inline with current online

shopping practices. Several ideas were developed for the project in the form of low-fi prototype iterations which eventually reached a conclusion through Literature review, sample collection, questionnaires, observations and iterations of a developed packaging type which would be developed and tested through stages of usability tests in accordance with user centred design techniques.

1.6: Conclusion

In conclusion it was decided that a sustainable packaging type, which would be both easy to use and be branded efficiently as to promote reuse among the user could be developed. This would allow the user to carry multiple purchases from remote lockers, which are becoming increasingly popular with consumers in line with current shopping trends to their point of destination. This project has limitations of not being tested in a real world scenario and doesn't benefit from the researcher being able to obtain prescribed materials to conduct full spec hi-fi prototypes.

2: Literature review

A wide base of literature collected for this project enables the researcher to develop strong foundations and understandings of the subject before design methods are approached. Literature review is important in addressing any research questions; this is to be conducted throughout the design process. Helping the researcher establish design theories and develop key ideas by drawing links between findings within a project and clarify ideas that already exist. (Kumar, 2011, P. 31) The researcher has selected literature in this research project by determining whether it is relevant and obtained from credible sources (Hanington et al, 2012, PP.112-113).

2.1: User centred design (UCD)

This project looks at UCD principals to design packaging for online shopping in 2017. Evaluating literature is important in relating user centred design methods to reach conclusions which would appeal to the highest number of stakeholders.

2.1.1: What is User Centred Design?

User centred design (UCD) focuses on the users needs to create better products by understanding problems, preferences and experiences of the user (Bennett, A, 2006, P. 180). UCD is a focused element of human centred design taking into account the specific traits of target audiences to help with problem solving in a design project (Tubik studio, 2018). Bennett, A (2006) states It is accepted that Individual choices are influenced by people's cultural experience and ethnography (Bennett, A, 2006, PP. 149-150). Ethnography allows us to understand complex cultures and behaviours that differ from your own. (Milton et al 2013, P.21) As cultural experiences are unique to the user and cannot all be experienced by the designer, it is important to undertake UCD methods to understand design requirements (Bennett, 2006, P. 20). This is summarised best by noyes (1999) 'users are not designers and designers are not users' (Nielsen 1993 cited by noyes 1999, P.91). For example, a user might have a different cultural upbringing or knowledge base than that of the designer, perhaps the designer has no need for the designed product. It is then important for the designer to learn about the target users needs before designing an affective product capable of appeasing, pleasing or being useful. UCD is taking human centred design and stripping it to sheer usability (Asmal 2000 cited by Bennett 2006, P. 303). Involving the user in design research to learn about the users needs, wants and requirements to develop the best design possible. 'User involvement, can be employed to assess whether a product meets the end users' requirements' (Bawa 1994 cited by noyes 1999, P.92). In reflection, usability of a design can be aided by a participant recalling on past experiences, cultural understandings and user preferences to be familiar with a product. These traits can aid how the user interacts with a product. Understanding problems that a user might face and learning how we can avoid them summarises user centred design.

2.1.2: When Is it used?

Marsh (2017) explains during the Mid 19th century, post industrial revolution the UK experienced an insurgence in machinery which aided production. The problem was machines aren't user friendly, controls are located amongst dangerous parts of the machinery and placed in inconvenient places to operate

the equipment (Marsh 2017, PP.23-26). Marsh (2017) explains designing for the user came with the outbreak of the 1st world war 1914-1918. Considerations were taken in producing munitions to prevent accidents and avoid catastrophic errors. Fast forward to the late 1970's - 1980's, developments in personal computers start. Marsh (2017) continues that the problem with, P. C's is the cogs and working parts aren't visible, a user can no longer decipher how a machine works by developing a cause and effect understanding. A solution was developed for this, the computer desktop. This provided a recognisable format which no longer required complicated instructions, installing familiarity with something they had already used (2017, PP. 23-26). User centred design approaches are adopted to insure that a user is familiar with a design before they come to use it, it minimises learning required to make involvement with a design as fluid as possible.

2.1.3: Why do we use it?

UCD not only benefits the users, but can also offer great practical solutions to industry. UCD offers financial savings by reducing end user time, for every $1 spent on UCD around $100 is saved (Cato 2001, P.6-7). As well as financial savings to a project UCD increases usefulness, Efficiency, Productivity, reduces errors, reduces training time and increase acceptance of a design (2001, P.7), all these factors are desirable to industry increasing profitability for a design. Other aspects benefit the user, creating a more desirable product overall, these could be speed and ease of use, or the appeal of a product (Rouse 1991 pp 14-15). UCD can also influence costs and bring positives to customers by categorising the monetary worth of a product (Rouse 1991 pp 14-15). A product may end up being designed only to find that it is too expensive or difficult to learn to use (1991, P. 15). Involving the user early with UCD research also uncovers a products failure of acceptance into the market, viability and validity of design. leading to a design that is only fit for landfill rendering efforts futile (1991 pp14-15). Noyes (1999) states that to overcome the problem it is best to involve the user in the design process and as early as possible when contributions from the user are most beneficial to the project (booth 1989 cited by noyes 1999, P.91). Such efforts are outlined by Marsh (2017) who reports in regards to HP's touch pad, stating upon launch you rarely get a second chance to tweak a design. HP spent $1.2 billion developing the touch pad, after launch, something didn't

arouse the interest of the user, ending up with HP abandoning the project all together (Marsh 2017, P. 28) An excellent reason in support of why UCD before launch is so imperative to the success of a project.

2.1.4: How do we use it?

Bennett (2006) describes UCD design as an emerging discipline, outlining methods such as questionnaires, surveys, usability tests and focus groups as common UCD design practices that can provide indispensable information (Bennett, 2006, P. 180). We can use these methods to determine user preferences by analysing quantitative and qualitative results these methods can provide us with (Muratovski 2014, PP. 149-151). Analysing results in a quantifiable way enables the researcher to place numbers, generate statistics and give comparable scientific figures and an overall measure of user preference. Quantitative research is objective and gives a contrasting result to qualitative research which is based on subjective interpretations of the user (Williams, 2007 and Belli 2009 cited by Muratovski, 2014, P. 155) To conclude, User centred design is used to identify what works best for a user, a UCD approach is adopted, especially in regards to research to understand specific user requirements. To make it easier to understand what the user needs and how a user will interact with a design or product.

2.2: Packaging Design

The function of packaging is to protect a product from A to B to C, as well as a tool for displaying and marketing a product. (Gobe 2009, PP. 205-206) There are many elements we can focus on when designing packaging; from printing techniques to branding elements, structural, material and sustainability issues. All these aspects form part of studying how packaging is designed. The following selection of literature outlines factors that are important to consider when designing packaging.

2.2.1: The importance of branding in packaging design

A successfully branded design affects purchase decisions influencing whether or not we would use specific brands. Gobe (2009) discusses branding importance within packaging design, describing how it engages customers even after the purchase of a product influencing your perception of a brand (Gobe, 2009 pp 201 – 205). Developing a brand installs trust in the user, building awareness of a product and enforcing customer loyalty (Slade-Brooking, 2016, P. 14). A successful brand has a unique set of values and uses these to its advantage to target customers promoting the choice of itself over competitors. 'The primary function of brands is to reduce our anxiety in making choices, the more we sense we know about a product, the less anxious we feel.' (Ind cited by Slade-Brooking 2016) A well rounded brand should encompass all values into the look and feel of the product. Every aspect of the design must be interoperated by the user as to the products use, its origin and what the design stands for entirely, making the designs purpose as transparent as possible. An array of semiotics can be used in branding; typography, colour and style as well as naming the product are important in altering a brands perception to the target audience (Slade-brooking 2016, PP. 46 – 51).

2.2.2: Positive Material selection in packaging design

Material selection can influence perceptions consumers have towards designs, these are manipulated using the look and feel of packaging (Calver, 2007, P.112). Paperboard and Corrugated fibreboard is cost effective, functional and recyclable (Klimchuk et al, 2006, PP. 140 – 141) and induces perceptions of recyclability and sustainability through its look and feel. (Jedlicka, 2009, P. 167) Consumers know corrugated fibreboard can be recycled almost anywhere (Jedlicka, 2009, P.167) We can use these perceptions to our advantage by projecting a sustainability choice in our brand values. Paper and card usually come from sustainable pine forests and whilst they are associated with recyclable materials, it is sometimes found that the manufacturing process produces pollution and paper mills are the 4th largest polluting industry in the

world. (Miller, 2012, PP. 174-175) Although the material itself is biodegradable, compostable and recyclable. (2012, P.177)

Materials can also dictate the manufacturing process (Morgan, 1997, PP. 12/13) affecting printing techniques used in the design process. Printing techniques for corrugated board are limited and contain modest printing elements, such as product codes and quantities in large type and bold symbols often omitting detailed printed areas (Roojen, 2009, p.9). Fortunately, Heller (2012) adds that bare cardboard has become a staple within graphic design, requiring less print, it not only looks better but adds to sustainability reducing the amount of toxic ink used (Heller et al 2012, P.136). Boylston (2009) adds that the more print a product has the less ecologically viable a job will become resulting in more consumer waste which needs to be de-inked before being recycled (Boylston, 2009, P.42). It within our best interests to use less print, which would also in turn reflect positively on the perception of a brand. More complex printing on corrugated cardboard types while possible by printing the outer wall before applying (Roojen, 2009, P.10), doesn't lend itself well to the sustainability preference the world is leaning towards in recent times. Aurora (2013) states that colourful packaging is used for display boxes which we don't need when designing delivery packaging for online shopping (Aurora, 2013).

2.2.3: Helping the user with Instructional design in packaging

Sometimes instructions are necessary to aid the user in completing tasks. Klimchuk (2006) states that instructional illustrations are found in packaging often depicting how to open, close, reseal, prepare a product or even contain precautionary hazard and warning information (Klimchuk et al, 2006, PP.126-127). Instead of developing instructions for every aspect of a design, there is need to ascertain what is being misinterpreted by the user to learn which elements can benefit from instruction (Smith 1999, PP.31 - 32). An investigation to determine if a problem exists and how serious it is, should be conducted before instructions are developed. We must decide how to feature designed instructions, Westendorp (1999) mentions it is common to see instructions printed on packaging (Westendorp, 1999, P. 34). Instructions are perceived with hearing, touch and sight. It is agreed that all these elements should be explored

to incorporate flawless instructions making the design as easy as possible for users to understand. (1999, P.34-35).

2.2.4: Packaging design construction techniques

The way packaging designs fold and hold themselves together is determined largely by any materials selected. As materials possess different properties, they also possess different techniques for folding, cutting, glueing or locking and a different approach may need to be adopted to achieve the position, strength and stability required for each design (Klimchuk, 2006, PP.137-142).

2.2.5: Using corrugated board in packaging construction

Folding corrugated cardboard can require scoring, giving defined folds without damaging the board at the fold. Scoring should be considered if the paper or board is coated, prone to cracking, heavily printed, thick card, folding against the grain or on a project which requires multiple folds. (Roojen, 2002, P.8) Folding cartons are often designed using a one-piece construction method and are usually die cut (Klimchuk 2006, PP.141-142). A 'crash lock' can be constructed using a die cutting machine Figure 1 (Thompson, 2012 P.81), 4000 units an hour can be produced using this method of automatic folding, cutting and gluing (Thompson, 2012, P.81). The term 'crash lock' refers to how the base is glued so that it unfolds as the box is opened (2012, P.81).

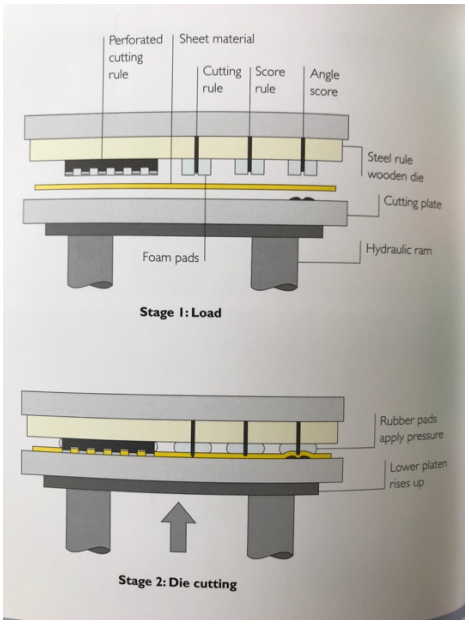

Figure 1 - Platter Die cutter diagram (Thompson, 2012 P.81)

2.2.6: The environmental impact of packaging and how it influences the design.

Consumers are becoming aware that most plastic is harmful to the environment, with the media reporting that > 8 million tonnes are being dumped into the ocean every year (Parker, 2015). This has triggered a shift in materials used to package products. An increased awareness of how packaging effects the environment has promoted sustainability (Aurora, 2013). The UK especially became aware of the crucial role packaging plays on damaging the environment introducing a 5p plastic bag charge in 2015 to combat the unnecessary waste of packaging (Gov, UK 2017). It is estimated that the carrier bag charge has decreased the use of plastic bags by 80% since launch (Gov, UK 2017). This is a clear improvement from statistics as recent as 2008, which claim 83% of municipal waste in the UK was condemned to landfill (Capsule, 2008). Disposal of packaging is a concern for designers and a key focus for environmental preservation (Stewart 2007, P. 174). Remove, Reduce, Reuse are commonly quoted as the 3 R's for guidelines in increasing sustainability, Stewart (2007) states the easiest way to be environmentally ethical is to remove as much packaging as possible. Although, this isn't always achievable without compromising the integrity of the packaging (2007, P.174), removal of packaging can negate the major purpose of protecting a product. Another way to improve environmental impact is to reduce, creating a lightweight packaging decreases weight carried by the transportation reducing negative CO^2 and other greenhouse gasses released into the atmosphere (Miller,2012, P.25, 175) Sourcing local materials for packaging also has the same effect by decreasing transportation of the product further reducing greenhouse gas emissions (Boylston, 2009, P.36). Stewart (2007) adds that reusing an item improves the environmental impact of packaging, by marketing a plastic bag as a 'bag for life' the chances of increased reuse are more probable than it being reused only once as a bin bag (Stewart, 2012, PP. 174 – 179). This shows designing to inform the user of the reuse purpose is enough to double the life of the product, reducing waste and in turn the carbon footprint of the package. The type of material also has a direct relationship with environmental impact, materials such as cardboard can be made from waste paper which is already recycled adding a positive for the environmental impact (Roojen, 2004, p.8)

2.2.7: Legislation and governmental laws

Legislation of certain terms and how they can be misinterpreted is important in packaging design. Packaging must comply with regulatory requirements and contain all relevant symbols which should be easily understood in the correct language for the area that they are intended to be sold. (Capsule, 2008) 'Green washing' is the term given to techniques which make products look more sustainable than they actually are, falsely displaying triggers or arousing assumptions in a products recyclability and overestimating claims of its origin (Jedlicka, 2009). Jedlicka (2009) explains government legislation symbols negate attempts in green washing detailing the origins of a product. Government policies can provide incentives for a producer or a consumer to bear the cost of environmental damage relating to the production or consumption of packaging. Consumers must pay fees to dispose packaging which contain certain materials, driving an incentive to use sustainable materials that don't incur such fees. This is the role of government policy in regards to packaging design (Jedlicka 2009, PP. 48-49).

2.3: Understanding shopping processes in recent times

2.3.1: The History and future of packaging design

Muratovski (2014) states historical research should be carried out to develop a trend forecast and predict where the need for a design may lead. "Design history is the study of designed artefacts, practices and behaviours, and discourses surrounding these in order to understand the past, contextualize the present, and map possible trajectories for the future" (Huppatz and Lees-Maffeie et al et al 2014 cited by Muratovski 2014 & Fisher 2016, P. 5). Developing an understanding of packaging design history is essential to knowing where designs may lead by forecasting the need for a design in the future.

Packaging design was born as long ago as 8000 BC. evolving because of the need for people to have possessions. Vegetable gourds, animal skins and leaves are all crude examples from this time period that served a general basic need to store and carry things (Klimchuk, 2006, P. 1). Forward to modern times,

packaging has rapidly developed since the end of the second world war in 1945. packaging has been affected by Socio-economic changes which have boosted packaging production. Technological advances, since early computers helped with the manufacture of modern packaging and retail changes such as self service shopping have changed the need and function of packaging and retail practice (Stewart, 2007, PP. 7, 10-11). Packaging design has been affected by post war austerity, manufacturing expansion and technological advances (Stewart, 2007, P. 10). All these changes show that a good understanding of past & recent technologies and current trends are essential for developing packaging, we must look into these factors and decide how this has affected packaging today. Fisher (2016) explains that from the 1960's design research has borrowed ideas from other disciplines and ideas start to be developed using these methods (Fisher, 2016). Branding has become much more than a companies' name packaging is being used to sell a product through advertising, reassuring customers that they are receiving original products and helping them to distinguish between manufacturers (Stewart, 2007, PP. 27-34). There is need to develop packaging much further than just a means of protecting something, we need to think about psychological implications and ergonomic values of packaging. Forward again to the 1990's and 2000's where packaging has started to become less about advertising the brand, focusing more on maintaining and building on the branding experience (Stewart, 2007, P.34). echoing recent times, we realise the overall experience of the design is the important factor in the development of this project.

2.3.2: Online shopping - Ecommerce

Packaging design has shifted focus with the arrival of the internet. As more goods are ordered online especially within the UK, online shopping sales hit £55 billion in 2011, a 1/3 of the European market share of online shopping that year (Kelkoo, 2011 cited by Guruswamy,2014). Online shopping culture in the UK is much bigger than that of the US with £1 in every £7 being spent online, compared to just 1/11 in the US (Butler, 2014). With shopping online proving so popular, the question is how does one receive their purchases? There's increased need for a purchase to arrive safely from the warehouse to collection by the customer, whether this be their homes or a click & collect point.

Since 2013 a click & collect strategy has been adopted by many online retailers. An advertisement to collect your Christmas order in store by John Lewis was a huge success paving the way for more retailers to offer this service (Thomas 2015, PP. 17-18). As many as 2/3 of online shoppers in the UK use click & collect to receive their purchases (Butler, 2014) and as much as 25% of online purchase in 2016 used click & collect (IMRG, 2016), It is clear to see the growing popularity of click & collect. Amazon has honed this strategy providing click & collect lockers in supermarkets around the UK and cutting deals with transport for London offering the service in Tube stations (Thomas, 2015, P.19). Customer shopping habits are becoming more proximity based with click & collect points opening along the customer's journey (Chaleil, 2016). Customers are now expected to travel with their purchase once again, the final point of collection is no longer the customers home, it has now moved to a distant point, whether that be at the end of a customer's street or at their local convenience store. we now need to focus on aiding the customer in transporting their purchases to their final destination. 'The 'last mile' is becoming an increasingly competitive place.' (Chaleil, 2016)

2.3.3: Amazon at the forefront of online shopping

At the forefront of online shopping in the UK, 'The everything store' has become a retail giant with rapid expansion and no signs of stopping (Molla, 2017). Founded by Jeff Bezos in 1994 as an online book store in Seattle (Stone, 2013) and soon launching in the UK with Amazon.co.uk in 1998 (Phx.corporate 2018) Amazon has been growing ever since. Not shy of trying new shopping techniques and a leader in implementing innovative technologies, recently Amazon launched branded click & collect lockers and checkout less stores which deduct the price of the product the moment you remove it from the shelf. (Farrell, 2016)

3: Research methods

3.1: Questionnaire

Questionnaires are important in collecting primary research at multiple stages in any user centred design project. Providing a variety of qualitative and quantitative results (Hanington et al, 2012, P.140). The first research method used for this project is a questionnaire survey, to be repeated after first analysis

of results. Questionnaires are recommended to be used in various research stages of a design project (Hanington et al, 2012, P.140).

It is determined that the design involves online shopping, it is fair to say that potential users would be internet users. As detailed in literature review around 77% of web users shop online (Twenga, 2014) It was understood that the best participants to provide information about online shopping would be found using an online questionnaire.

100 participants per questionnaire will be collected via the researcher's social media channels. An estimated 15% of the researchers contacts need to participate to achieve this response rate. The response rate can be influenced by how the questionnaire is constructed, Hanington (2012) states that clarity, appearance and layout can improve response rate (Hanington, 2012, P.141). When conducting a questionnaire, we are trying to compare people in a quantifiable way using a list of variables (Muratovski, 2014, PP. 112-121).

There are several types of questions we can ask participants, 'dichotomy, multiple choices, checklist, categorisation, frequency of occurrence, ranking, quantity, scale and open ended questions.' (Muratovski, 2014, P. 122) These provide a varying amount of results which can be measured in different ways. For example, dichotomy questions provide a simple yes or no answer grouping participants into either one group or another. Multiple choice answers on the other hand are best suited to an open ended question. Participants are invited to choose one option from several, the researcher can make predictions and provide answers which they think it may be, assumptions will then be confirmed by participant's responses (Muratovski, 2014, P.122). Questions asked can be both open and closed ended questions, both types are asked for this research project (Kumar, 2011, PP.151-153). Questionnaires can provide quantitative data, which is useful as a definitive measure between participants, it gives numbers to data that we can use to test a hypothesis through scientific technique that can be assessed accurately (Muratovski, 2014, P. 165). Semantic and Likert scales are used to calculate how participants agree or disagree with a question, providing efficient data to be analysed. (Hanington et al, 2012, P. 140)

A Likert scale assumes each option has equal value providing an accurate measurement of each statements importance (Kumar 2011, P.170). This allows the data obtained from these answers to be analysed quantifiably.

3.1.1: Ethics

It is understood that user centred design research must be conducted in accordance with ethical compliance and principals of conduct. Each stakeholder must be taken into consideration and correct procedure adhered to when undertaking research. Seeking consent in design research is important and steps to seek informed consent are undertaken throughout this project (Kumar 2011, PP. 242-9). "Good understanding of these ethical standards is important particularly in a University environment" (Muratovski 2014, P. 40) As this paper is submitted for a module of MA Design in accordance with ethical protocol for the University of Leeds this statement runs particularly true, a good ethical standard must be practiced at all times which will aid in providing valid research results. Muratovski (2014) follows four ethical mistakes that the researcher should avoid when conducting research of an academic nature are Data fabrication, Elimination of data, Exploitation of data and plagiarism (2014, P. 40). The researcher will take steps ensuring these elements do not exist in this report and that all data produced and recorded is as ethical as possible. A covering letter is provided detailing the project and explaining that the questionnaire is a research brief for the University of Leeds, School of Design [Figure 2]. It outlines the relevance of the study and explains that participation of the questionnaire is entirely voluntary. An indication that the participant does not have to proceed will be made clear. As further outlined by Kumar (2011) participants will be thanked for their time (Kumar, 2011, P.249.)

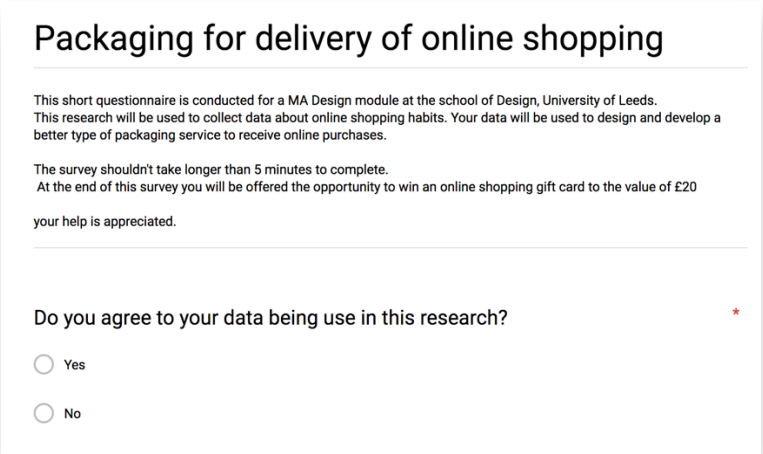

Figure 2 Questionnaire consent form (Brown, 2017)

3.1.2: Response rates

Response rates can be affected by reward incentives for participation, these can be in the form of money or gift vouchers. (Muratovski, 2014, P. 74). Participants have no obligation to help the researcher, in a subject they hold no interest, it is thought an incentive is a good way to increase involvement. In contrast Kumar (2011 pp 245) suggests that a reward incentive does not increase response rates and people are more likely to partake as they realise the importance of the study. As participants are not picked from a pool of those with predetermined interest in packaging, it is thought that Kumar (2011) may be incorrect in this statement.

Kumar (2011) comments that response rates can be low for questionnaires and depend on factors such as topic of interest (Kumar 2011, P.245). With the current strength of social media, It is suggested that this statement is no longer valid. Response rates for an online questionnaire are thought to yield a high number of results. It is clear from this discussion that factors regarding questionnaires can be influenced by how a questionnaire is conducted. A reward incentive of an online shopping voucher will be detailed within the covering letter stating that if the participant chooses to be entered into a draw they can leave their contact details afterwards by (Muratovski, 2014, P. 74), it will be highlighted this is up to the participant and is not compulsory for ethical reasons.

It is not unethical to provide an incentive after the study is complete, but giving a reward before a study has taken place can be considered unethical (Kumar 2011, P.245). The questionnaire should be clear, concise and easy to understand. As this is an online questionnaire the researcher will not be present (Kumar, 2011, P.145). Simple understandable language will be used to help participants complete the question easily and ambiguity should be eliminated to provide more accurate results (Kumar, 2011, P.145).

3.1.3: Expense

Online questionnaires are inexpensive to produce and likely to amass a large number of participants (Kumar, 2011, P.245). The only cost this will require is the proposed shopping voucher of £20 provided to one participant as an Incentive. Google Forms which is a free web application is used to conduct the questionnaire, a link to the questions will be sent via social media. Online questionnaire software is recommended to provide accurate, efficient data collection and aid easy distribution. (Hanington, et al 2012, P.140)

3.2: Market research

Market research will be conducted for this project determining what has already been produced in packaging design to establish current trends and what competitors are producing. It also helps the researcher understand which materials are best suited to this type of design. It allows the researcher to 'Brandscape' and gather a visual impression of the sector to be researched (Milton 2014, P.76). All delivery packaging received for the duration of this product will be analysed determining key features and design trends that may want to be included or excluded in the finished design.

3.3: Prototyping

This project explores several iterations of prototyping as user centred design practice. It is noted that Low-fi and Hi-fi prototyping should be used at intervals to provide iterative changes with feedback noted at each stage (Hanington et al 2012, P. 138). Prototyping should be at increasing complexity throughout the project. Notes are to be taken at each stage of prototyping for the research team

to process and decide which benefiting elements of the prototype to keep, and which should be changed (Muratovski,2014, PP. 148-149). These principals benefit UCD by identifying any problems early and throughout the design process that users may struggle with and adapting to rectify findings as they occur, leading to a streamlined design. Prototyping iterations will continue throughout the project, increasing in complexity as findings are made, initially low-fi prototypes will be made from easy to manipulate inexpensive materials (Jackson, 2012, P.9) working their way up to near finished products using correct materials. suggestions from literature review detail this should be corrugated fibreboard (Pepin press, 2007). A CAD drawing software or a graphic design software of your choosing should be used to design nets, (Jackson 2012, P. 10). The researcher is proficient in using Adobe illustrator, this software was deemed easiest to produce exact scalable drawings for accurate production of nets. Each prototype design will be printed in scale using a large format printer and placed over the corrugated board to be cut by hand. Printing techniques, branding, instructions and increasingly complicating elements of the design will be added as the prototype matures. Prototypes will be constructed by hand and cut using a scalpel or craft knife. Straight edges will be drawn and cut with the aid of a metal ruler. A self healing cutting mat will be used to rest on to keep lines accurate and straight (Jackson, 2012, P.08)

3.4: Usability testing

Usability testing is a process subjecting participants to asses how accurately a product meets specification, it ensures that a particular design works efficiently for the intended target market (Rubin 1994, PP.25-28). The aim of usability testing is to develop products which are easy to learn and satisfying to use, minimising risk and provide valued functionality (Rubin 1994, PP.25-28). Usability testing is 'an evaluative method that allows teams to observe an individuals experience with a digital application' (Hanington et al 2012, P. 194). Usability testing is especially effective in regards to early prototyping and designers usually make small models and early iterations before pursuing more complex designs eliminating costly mistakes (Milton et al 2013 p 124). For this project tests will be carried out as suggested by Milton (2013) on earlier iterations of prototypes. For final stages of Usability testing with a honed

prototype, a set number of tasks for participants to carry out will be determined and recorded through observations and physical timings using a stop watch. The tests will be conducted using a simple single-room setup as detailed by Rubin (1994) (Figure 3) to be a quiet secluded room with the researcher (test monitor) located 6ft from the participant, to observe and not distract whilst set tasks are to be performed. 'It is important to remain within the peripheral vision of the participant, so the participant can sense where you are at all times, but not so close that you are distracting or anxiety provoking' (Rubin, 1994, P.51). The simple single room will be adapted to accommodate the developed packaging instead of a computer as pictured in the diagram Figure 3 (Rubin, 1994. P.81) Because of limitations, the additional observers will also be omitted from the Usability testing. The researcher does not find the additional observers necessary at this level of development for reasons such as cost, minimising provoked anxiety and decreasing distractions (1994, P.51) Observing a user interacting with a design is an important step within UCD. The researcher can record tasks, performance, comments and reactions of users as they interact with the product (Muratovski, 2014, PP. 148-149) This enables the researcher to record any faults found or improvement that can be made. During observations, the researcher will take a notebook and analyse points of interest that affect the environment or user.

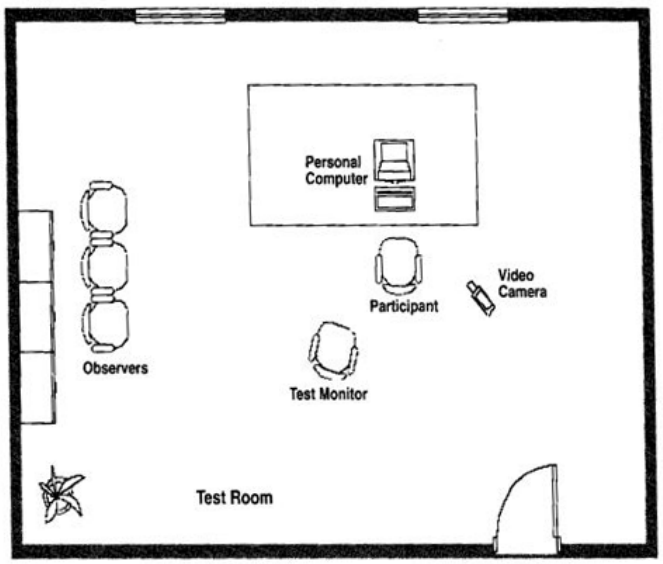

Figure 3 - Usability test room (Rubin, 1994 P.51)

3.5: Observation studies

Observations will be carried out on environments, recording structures and settings as well as behaviour and interactions (Muratovski, 2014, PP. 64-65). Pre-determined locations of observation will be made at various points along the eCommerce journey, including the Amazon warehouse, Royal mail collection points, and Click & collect lockers. Observations in settings are important, as specific places often have the ability to influence the behaviour of subjects (Muratovski, 2014, PP. 64-66). Participant observation can be carried out by shadowing those in an environment and carrying out the same tasks as a participant, Muratovski (2014) continues that it is good to get close to an observed group and immerse yourself in ethnography. He also states that the researcher should not get too close as to cloud an objective view of the participant (2014:, PP. 64-66).

3.5.1: Amazon Lockers

The researcher will order packages from Amazon.co.uk to be delivered to Amazon lockers observing the user experience of this technology. Notes regarding the size of the lockers Internal dimensions of H x W x D will be taken. How a package fits inside the locker will be recorded and any obstructions that would affect the proposed packaging will be documented. The researcher will observe and record for a period any other customers visiting these lockers at the time.

3.5.2: Royal mail collection office

The researcher will collect packages ordered online from royal mail collection offices to observe the process and record other users doing the same. Waiting times and amount of people visiting these collection points will be observed, as well as the and general atmosphere, layout and user journey.

3.5.3: Amazon fulfilment centre BRH1

The researcher will visit the Amazon fulfilment centre BRH1 for a guided tour and to record in notations and illustrations, photography of the warehouse itself is not permitted. Any points of interest will be noted, along with any interesting facts and figures which could help the project. Tickets for the guided tour are obtainable online and free for any member of the public to experience and enjoy (Amazon fulfilment, 2017).

4: Research results & Analysis

Primary research and secondary research are carried out for this project, the results are analysed to determine the best outcome for developing a type of packaging for ecommerce shopping.

4.1: Literature review results

Literature review was carried out to determine any secondary research for best approach to developing a packaging solution, it helps the researcher organise background and context of a subject and explore the best possible design outcomes for the project.

4.1.2: User centred design

The packaging should be developed in accordance with User centred design techniques which will outline and give guidance to important user factors increasing the designs credibility and ensuring an adoption in a real world scenario.

4.1.3: Sustainable packaging

Packaging for ecommerce shopping should use sustainable materials. A reusable approach was decided to minimise waste. The packaging should also be made from fully recyclable materials which would come into effect after the products reuse life cycle is complete. Materials should also be instantly recognisable as being recyclable to promote a brand image that is natural, organic and environmentally friendly.

4.1.4: Brand development

A brand should be developed for the design to increase adoption rate of the developed product by installing trust and familiarity to the function of the product (Gobe, 2009). The design of the packaging should inclu0de a Wow! Factor which would add to the experience of buying a product online. (Thomas, 2014, PP. 35-40)

4.1.5: Instructional design

It was determined that the packaging developed should be as easy as possible for the end user to understand. Instructions should be developed that increase usability of the packaging design.

4.1.6: Material selection

It is important to consider material selection which could contribute to manufacturing capabilities, sustainability, printing techniques and strength of packaging. It was decided the best material to use would be a corrugate board which meets most of these requirements. Printed elements located on the packaging should align in accordance with the chosen material, they should be Bold and simple and convey any message to the user in an easy to understand way.

4.1.7: Prototyping

It was understood that several iterations of prototyping, from low-fi to hi-fi would need to be undertaken to determine the final route as to how to best design the packaging.

4.1.8: The future of packaging

Review of Historical research lead to findings of production capabilities of current times, it was understood that packaging design has evolved immensely from past examples and it is now common to use packaging not only to transport or store a product, but it is also important to use the packaging as a means of brand advertisement and install a positive experience in the customer. This also

determined that there would be a need to develop a packaging to aid the user in ecommerce shopping practices.

4.2: Online Questionnaire 1

An online questionnaire administered through the researcher's social media channels recorded a varied demographic of participants from a mixed background and social status with a varied income giving fair reflection to all groups of potential online shoppers.

It was found that 42% of participants shopped online an average of 18 times a year and around 10% of participant's shop online more than 200 times a year.
It was found that compared with an online shopping study conducted by Guruswamy (2014) online shopping frequency had increased in only a few years. Generally speaking, we can say that more people are making online purchases more often in 2017 compared with 2014. It was found around 6% of participants of the study conducted by Guruswamy (2014) shopped online more than 200 times a year giving an increase of 4% overall.

It was hard to make a direct comparison of figures found in Guruswamy (2014) study as the options are not exactly the same (Guruswamy, 2014, P.32). To make a direct comparison data had to be re-categorised with mean averages so each study was directly comparable.

average amount of annual purchases	Researchers data 2017	Guruswamy 2014
0 to 50	80%	78.59%
50 to 100	1%	4.08%
100 to 200	10%	10.20%
200 to 300	5%	3.06%
300 +	4%	3.06%

Figure 4 - annual online purchases results table (Brown, 2017)

It was found that participant preference for online shopping locations has changed in recent years with 47% now preferring Amazon, followed by 26% EBay and only 18% dedicated brand websites. This is a complete reversal from Guruswamy (2014) study detailing In 2014, people preferred the dedicated

brand website (44.44%) as this installed trust (Guruswamy, 2014, P.33). Amazon has worked hard since 2014 on its public relations and brand image, which has increasing its public perception and favourability from 13.13% in 2014 to 47% today. Something that EBay was struggling with around that time and have only grown from 17.17% to 26% today. (Wilson, 2013 and Tims, 2013). From these results it can be seen the shift in preference for how the public prefers to shop with Amazon reversing its results and becoming the dominant retailer in the online market place.

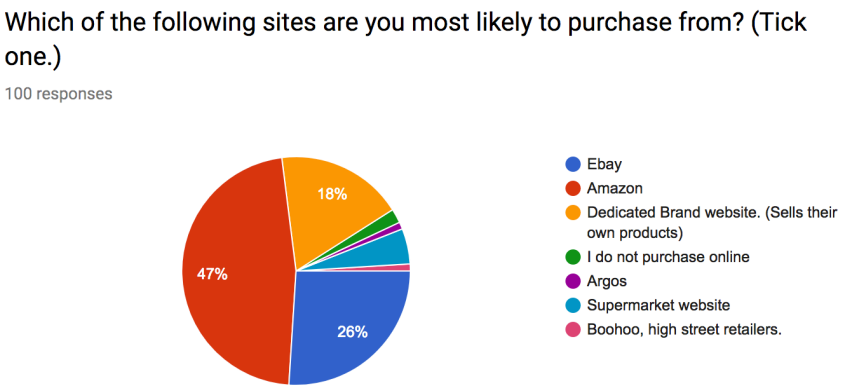

Figure 5 - Questionnaire results of online retailers (Brown, 2017)

Shopping preference was further supported by participant's perception of Amazon as a courier service stating they have received deliveries from them more often than other dedicated courier services. Coming second to royal mail (85%) in receiving online purchases from, 75% of participants stated that they have received online shopping from Amazon almost 20% higher than then next dedicated courier services Hermes (56%), DPD (54%), Yodel (51%) and significantly more than UPS (36%), UK Mail (33%), Fedex (23%), TNT (20%) and Inpost (6%). It is interesting that whilst not a dedicated courier service, Amazon has managed to shoehorn itself into the consumer's familiarity ranking higher than other couriers save the national postal service of the UK.

When asked where participants are most likely to have their purchases delivered 49% stated home as being the most likely place or work (23.8%), only

8% of participants chose click and collect options as their preferred delivery method. Traditionally home is the most convenient place to receive a delivery and these results reflect this. The low percentage choosing click & collect methods may be due to the early adoption rate as this is a new method of receiving a parcel. Demand must be high to have Amazon invest in the technology (Thomas, 2015, P.19).

Although the result of people opting for click & collect options are low, when participants are asked if the idea of click & collect lockers interested them 45% of participants stated this idea did interest them and 33% that they might be interested. This potential conversion by persuading those who currently don't use click & collect methods to adopt the technology increasing those that use click & collect as an option by up to 78%.

Results found in this online questionnaire supported findings in literature review which pointed to an interest in sustainable packaging types related to amount of print found on a package. 48% of participants said they preferred unbranded boxes and 41% agreed lightly branded packaging was best suited. Only 11% of participants enjoyed heavily branded packaging. This question was followed up with a text field for participants to give a reason to their answer. Reasons for preferring unbranded packaging included discretion, potential theft of a parcel and it was an environmentally friendlier option. Participants who prefer lightly branded packaging gave reasons such as they wanted to know where it came from before opening.

Participants were given a selection of important factors in packaging and asked to select multiple options. The most frequent option chosen was protects my purchase (81%), followed by sustainability/environmentally friendly (48%), strong (47%), fits your purchase well (46%), not over packaged (34%), Quality of materials (29%), easy to carry (28%), I know where its come from (28%) and discreet (27%). These results show the most important factor to participants was a packaging protected the contents. Interestingly the factor of environmentally friendly ranked highly, this is a good indication and reflection of favouring

sustainability. As mentioned in literature review the public is becoming aware of their environmental impact, especially when packaging is involved.

4.3: Online Questionnaire 2

A second questionnaire which asked follow on questions to 100 participants. The demographics collect were of similar values which represented the researcher's social media followers.

Participants are asked whether they often buy more than one item online at a time. [Figure 6] 81% of participants answered that they often buy more than one item at a time compared with just 18% of those surveyed who replied they only purchase singular items at any one time. This shows that people usually make multiple purchases at any given time showing the need to develop a packaging system that caters for multiple purchases from a multi channel retailer like Amazon. When asked if the respondents would like their purchases to arrive at the same time 89% responded that they would. [figure 7] this supports the idea of a packaging system that holds more than one purchase.

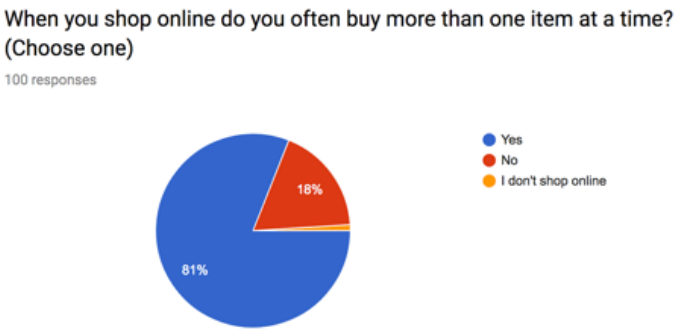

Figure 6 - Results of multiple purchases (Brown, 2017)

Figure 7 - Results of preference for purchases arriving together (Brown, 2017)

Participants reported numerous problems perceived with collecting multiple items. Travelling to a depot was reported to be the most problematic (72%) followed by collecting at a convenient time (69%), Long queues (42%), carrying of multiple items (37%), items not having arrived yet (33%) and providing ID on collection (24%).

The option of using a click & collect locker to pick up purchases eliminates all these factors. As locker numbers are increasing, customers reduce travelling distances to a collection depot, they would also not have to collect before the depot closes. Click & collect depots eliminate long queues by being fast and convenient and notifying the user when their items have arrived. Providing ID is also no longer needed as the lockers provide you with a unique code to use when collecting your parcel.

The only continuing perceived problem not eliminated by click & collect lockers would be carrying multiple items, which as previous questions show 81% of shoppers tend to order multiple items at once. This is seen as a major factor that would need to be eliminated using packaging design.

Participants are asked to plot on a semantic scale the importance of the following packaging elements, this type of question was used to see which factors are of a high concern to participants.

importance 1 (least) - 5 (most)	1	2	3	4	5
strength of packaging	15%	4%	7%	27%	47%
Ease of construction	18%	31%	21%	21%	9%
fits contents well	15%	4%	13%	24%	44%
protects contents	15%	1%	4%	5%	75%
cost of packaging production	29%	15%	24%	21%	11%
ease of carrying package	5%	23%	16%	25%	31%
ease of opening package	6%	24%	19%	24%	27%
inconspicuous contents	24%	6%	36%	18%	16%
packaging can be recycled	21%	4%	16%	26%	33%
packaging is made from recycled materials	22%	9%	24%	24%	21%

Figure 8 - Semantic scale table of packaging preferences (Brown, 2017)

The most important factor is that a packaging protects its contents (75%) and the strength of the packaging (47%). A high number of participants indicated a package should fit the contents well (44%), followed by a preference for recyclability and ease of carrying. Participants indicated that they are not concerned with the cost of packaging production.

Whilst sustainability through recycling still appears to be a concern, it seems that it is not held in high priority as results from questionnaire 1 indicate, this may be for reasons such as structure of question being asked in a semantic scale rather than multiple choice or pool of participants are not the exact same as before.

Participants are presented with illustrations of 3 types of packages [Figure 9] When asked which they preferred the look of, 47% preferred the look of an internally printed packaging followed by an un-printed packaging type (32%). The remainder preferred externally printed packaging (21%). This echoes the previous questionnaire result; participants prefer a less branded packaging. An internally printed packaging gives this impression externally, but the second the recipient opens the package they know where it came from.

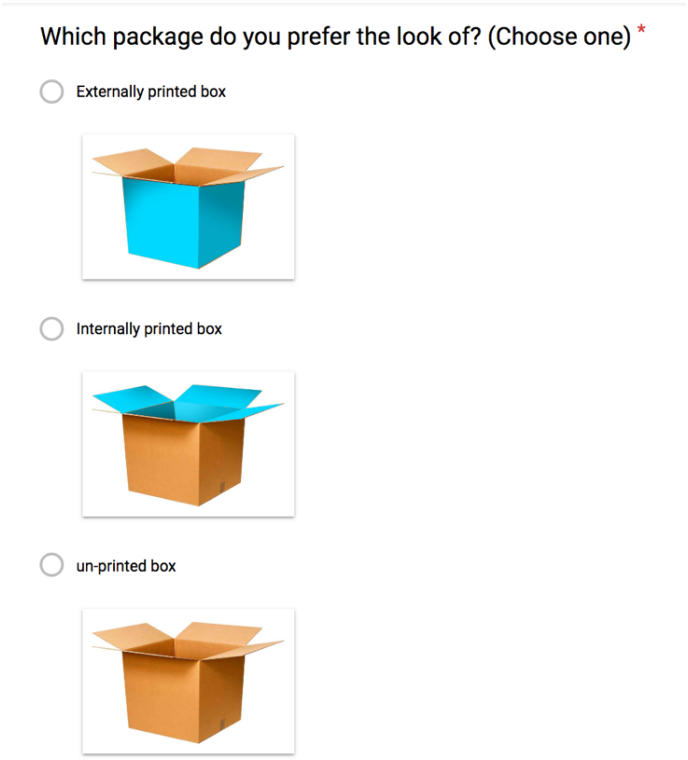

Figure 9 - Illustration of printed boxes (Brown, 2017)

After being presented with an illustrated example [Figure 10], 52% of participants suggested 2 handles on each side looked easiest to carry, whilst 44% thought that the single central handle looked easiest and only 4% suggested that no handles would be a better option.

This shows participants agree handles are a better option overall and whilst most chose 2 handles, they were not given a scenario in using the packaging. Participants explained why they chose their answer. Many participants suggested that the singular handle frees up their other hand, aiding in opening a door or dealing with a small child. Although participants suggested the middle handle looked flimsy, this was an illustration which could be eliminated with the actual design.

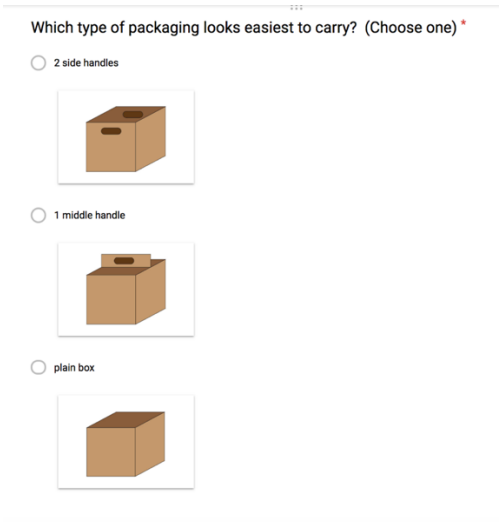

Figure 10 - Illustration of box handles (Brown, 2017)

Participants are asked which combination of arrows [Figure 11] would they expect to mean push in at the sides The majority of participants (69%) chose option 2, 22% of participants claimed the didn't know, 4% option 3 and 4% option 1 and 1% choosing option 4. This shows an overall majority of participants selecting the hypothesised answer, if this result was coupled with cause and affect of using a packaging there would be minimal mistaking of the symbols meaning.

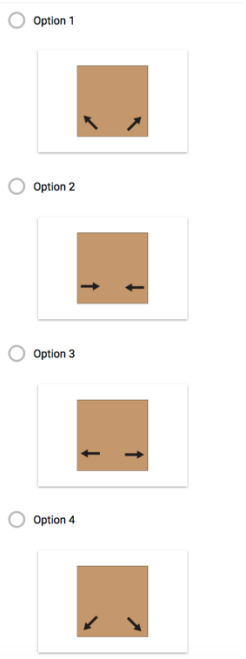

Figure 11 - Illustration of directional arrows (Brown, 2017)

For branding purposes, participants are asked to express their association of colour with certain key words that the researcher wished to reflect in the branding for the project.

	environmentally friendly	security	trust	speed
Blue	0%	17%	44%	8%
Orange	0%	8%	3%	10%
Yellow	0%	23%	6%	15%
Purple	0%	0%	27%	2%
Green	90%	2%	12%	12%
Brown	10%	10%	3%	1%
Red	0%	40%	5%	52%

Figure 12 - Table of colour association (Brown, 2017)

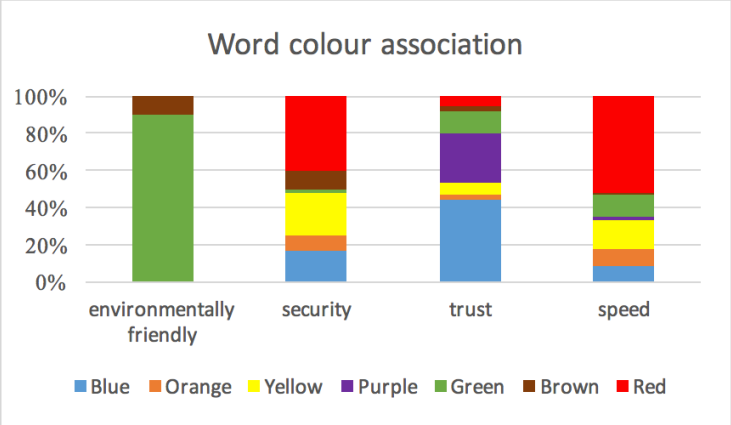

Figure 13 - Graph to show colour association (Brown, 2017)

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It was decided that choosing the colours brown and blue which can install established connotations of association and are complimentary antipodes of the colour wheel (Slade-brooking, 2016, P.55) would promote security, trust and environmentally friendly notions whilst still providing a good aesthetic to the brands image. Although Gobe (2009) states colour branding is not just about providing good aesthetic, it is about relaying the correct message to the consumer. (Gobe 2009, P. 79) it is pointless mixing none contrasting colours for the sake of relaying messages using the strongest association. For example, if we produce a brand that incorporated the highest associated colours we would

have to create a successful brand image using the colours Green, Red and Blue. The researcher feels that this split-complimentary colour combination would not provide the desired branding message.

4.4: Observation studies

4.4.1: Royal mail collection office

The researcher observed several royal mail collection offices recording notes as research was conducted. The researcher immersed themselves into the environment by attempting to collect a parcel at each location whilst studying subjects and the environment (Muratovski, 2014, PP. 64-66).

A large mix of people from a wide base of demographics are observed at each location. Queues at collection offices are lengthy, although not all people waited by themselves and often brought friends which contributed the the appearance of the queues size. The wait time at each collection facility was observed to be around 15-20 minutes to reach the front of the queue, often the queue extended outside the building with the amount of people visiting [Figure 14].

Collection lockers are observed [Figure 15], likely for regular attendees of the site and those who receive large volumes of post. The researcher observed nobody using the lockers, this was seen as a waste of space and could easily be filled with a system of automation to reduce wait time at the location.

The researcher observed that royal mail has adopted technology at a few locations to aid in payment of duty charges [Figure 16]. These were located along the queue, although nobody was observed using this technology.

Figure 14 - Queues outside royal mail collection office,

Halifax (L) & Bradford (R) (Brown, 2017)

Figure 15 - lockers at royal mail collection office, Halifax (Brown, 2017)

Figure 16 - Duty paying computer at collection office Bradford, (Brown, 2017)

4.4.2: Amazon Locker

The researcher ordered parcels to be delivered to click & collect lockers, these were found to be all of the same design and modular dimensions throughout [Figure 17]. The lockers are often found in supermarkets, although they are also found in places such as petrol stations and tube stations. These are all places visited regularly for other purposes by the public and found commonly along a persons commute.

Measurements of the lockers were taken by the researcher, internally it was found that the largest was 430mm(H) x 380mm(W) x 580mm(D) [Figure 18]. This is larger than the prescribed dimensions by Amazon (2017) and could probably fit a larger parcel overall.

The researcher noted that when ordering multiple items online to a locker location, they are delivered to multiple smaller lockers rather than a singular large locker. This is an inconvenience meaning the collector must spend time opening more than one locker to collect their orders, increasing difficulty of carrying multiple items. 3 different items were collected by the researcher at one time from different compartments. It would be less time consuming if they were all available in the same locker.

The researcher visited each locker location for 45 minutes, it was observed that nobody else attended the lockers during this time. There are a few variable factors in this, such as the time that the researcher visited the locker. It is also likely that the efficiency of locker design meant that a queue for parcel collection had not been allowed to build up like the royal mail collection point. Perhaps the early adoption for this new technology was a factor in the low visitor count to each locker.

Figure 17 - Click & Collect lockers Elland Morrisons & Petrol station A1 - differently branded (Brown, 2017)

Figure 18 - Internal view of click and collect locker, Bradford (Brown, 2017)

4.4.3: Amazon fulfilment centres

The researcher visited an Amazon Fulfilment centre which offers a 45-minute guided tour, of the site which is estimated 3 times the size of Wembley stadium and situated over 3 floors. It was noted that during busy periods of the year and peak trading, workers may struggle to keep up with the amount of orders and erecting packages was one of the most time consuming elements of the process. This concluded that an easy to assemble packaging type should be developed.

It was found that the packaging design needed to be stackable and have structural stability. This was defined by how the packaging was stored. Distribution to couriers requires that it is stacked to fit in their vehicles.

The diversity of the amount of products found at the site suggests that the packaging should not be defined by the product that can fit inside it and that the locker dimensions should be the deciding factor of the packaging size. It was found that over 14 different box types were located at each packing station.

Figure 19 - photos inside Amazon fulfilment centre BHX1 (Brown, 2017)

4.5: Visual Research/ Sample collection

Samples of delivery packaging are collected and analysed, it was found most delivery packaging contained a raw cardboard corrugate format which made from a double walled corrugate with minimalistic print. Inc. I. (2014) documents a total of 83 different packaging types used by amazon in a comprehensive table of figures suggesting that at this time there was no standardisation to Amazons packaging. Compared to recent figures. It suggests this packaging process has been honed and different packaging types have been minimised.

Figure 20 - Researcher collection of eCommerce packaging (Brown, 2017)

4.6: Prototyping

4.6.1: Low-Fi Prototyping

Several iterations of low-fi prototyping were conducted by the researcher to determine the best approach to solving the problem of developing an effective packaging solution. After primary research it was decided the best approach

involved the constraints in size set by the click & collect locker. A system that benefitted carrying multiple items easily with one hand was decided upon.

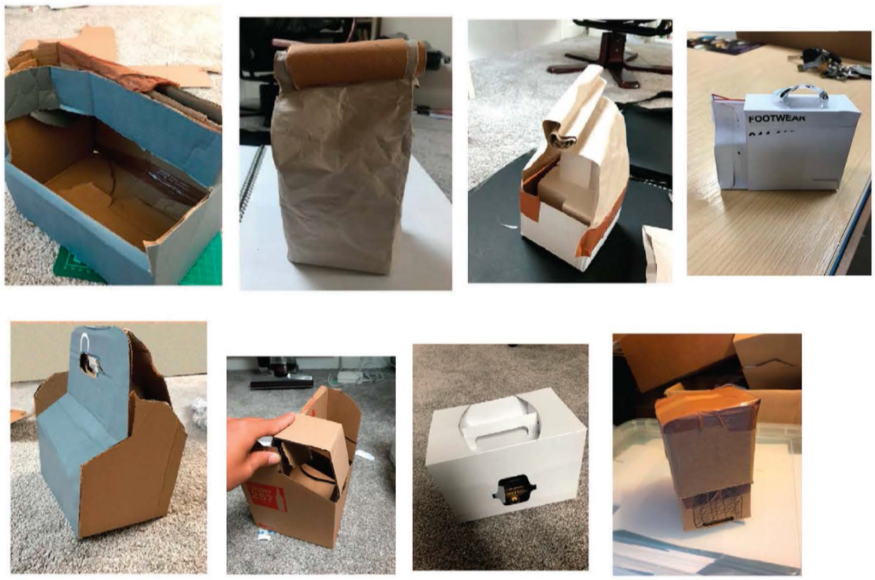

Figure 21 - Various Low-fi prototypes (Brown, 2017)

4.6.2: Usable prototype

A usable prototype was developed and chosen to conduct initial stages of usability testing. It was decided the constraints of the amazon locker size would dictate the size of the actual packaging. The prototype was designed to this exacting size using Adobe Illustrator to achieve precise measurements. A draft version was printed using a large format printer and overlaid over a sheet of cardboard of similar qualities to materials observed by literature review and sample collection 1m x 2m in size and cut by hand. It was assembled using a recycling compatible adhesive hot melt gun which is the best adhesive to use when recycling is concerned (Bennett, S 2015).

Figure 22 - Hi-fi prototype and usability tests (Brown, 2017)

4.7: Usability test 1 results

Participants are presented with a prototype of the proposed packaging and analysed whilst using the product. 10 participants are observed carrying out use of the design for the initial usability test and asked to perform set number of tasks.

4.7.1: How well did the participant construct the box from flat?

Participants are asked to construct the packaging from flat. The prototype featured a crash lock design which enables participants to assemble the design with little effort. Simple arrow guides are placed at strategic corner positions determined by Questionnaire 2 to aid the participant in carrying out the task. 40% of participants found it really easy to construct the parcel and did so in a matter of seconds without pausing for a noticeable period. 50% found it easy to assemble, perhaps hesitating for a couple of seconds before completing the task. 10% found it simple pausing for a longer period still. None of the participants struggled with the assembly of the prototype and all managed the task proficiently. Observations of participants are recorded and 90% of participants are found to show delight at how easy the packaging was to

construct. An audible comment of “That was easy!” was observed from at least 2 of the participants.

This shows a suitable construction method was chosen for the design which was easy for the user to assemble. Found on many types of packaging, the crash lock enables the user to construct the box trouble free and without hindrance.

4.7.2: How did the participant use the lid?

This prototype contained an attached lid allowing compression of contents. This could be used internally and externally depending on the intended use of the packaging. The natural assumption of how the lid should be used was observed. 80% of the participants assumed the external position of the lid and only 20% of participants tried to use the lid as a compression aid by folding it inside the box. None of the participants found that the lid had 2 separate uses on their own and presumed how they had used it to be the only option. Participants are observed to have problems when using the lid, specifically with flaps added to the lids structure. These created a confusing experience and users commented stating this is a badly designed element of the prototype.

4.7.3: Observation of Participant using adhesive tape.

Participants are observed to see if they located the adhesive strip on the underside of the lid. Participants are not fed instructions or lead to the where bouts of the strip. 80% of participants are observed to locate the strip, while 20% didn't find it at all. Although a high percentage found the strip eventually, it was not found with ease to a satisfactory level. 100% of participants showed an emotion of surprise, showing that they did not expect the strip to be there. It took time for one participant to come across the adhesive strip at all. If an adhesive strip is to be used in the final design, instructions need to be provided to ensure all participants find this efficiently.

It was observed that when a participant found the strip, they instantly knew how to use it. Adhesive strips are commonly found on a variety of packaging, so often that participants know how to use them.

4.7.4: Observation of participants using the handle

Participants are assed lifting the box and how comfortably they seemed to carry the package. All felt comfortable with the handle with most finding it very comfortable to use. Comments such as 'thick' and 'comfortable' are stated by all participants in a positive way. When asked if they would change anything about the handles design, all appeared fine and had no suggestions for improvement.

4.8: Usability Test 2 results

Further iterations of prototypes are created taking into account research from previous usability testing and overcoming the problems found there. V7.04 was produced to 10 participants for final stage usability testing. Results of this round of usability testing are used to determine if any problems still exist with the final design and whether designed instructions help with end user construction of the packaging. Participants are tested by splitting groups into those who's packaging contained instructions and those who did not have instructions on their packaging. Participants are then asked to carry out the same tasks whilst being observed and timed.

Figure 23 - Participant performing usability test (Brown, 2017)

4.8.1: Time taken to construct the package?

Participants are given the instruction to construct the package from flat with no further instructions and have to rely on whether or not their box contained further instructions for the task. 50% of participants had further instructions whilst 50% of participants had none. A stop watch was started from when the participant first touched the packaging. The results are recorded in seconds. (Table)

Participants that had further instruction completed the task much quicker than participants who had no instructions. This is a clear indication that the instructions developed helped the user understand the design to its fullest. Most participants seemingly found the task easy to complete with no mistakes made. This is further indication that the design of the packaging is easy to use.

Participant number	1	2	3	4	5
Time taken to perform task with Instructions	1.4s	2s	1.8s	2.4s	3.5s
Time taken to perform task with no instructions	3.5s	3.6s	4.8s	2.9s	5.2s

Figure 24 - Table of results for construction times, (Brown, 2017)

4.8.2: Participants are shown 4 sets of instructions and asked which size they preferred.

Participants are shown a series of instructions increasing in size then asked which size of instruction they preferred [Figure 26]. The size of each instruction was measured by the corresponding PT size for the typeface of the instructions used. Participants indicated that their preferred size of instructions was that which contained the type size 14PT (60%), 16PT (30%) was the next preferred size with 12PT (10%) being chosen next. None of the participants preferred 18PT

size of instructions	12PT	14PT	16PT	18PT
	10%	60%	30%	0%

Figure 25 - Results table of preference for instruction size (Brown, 2017)

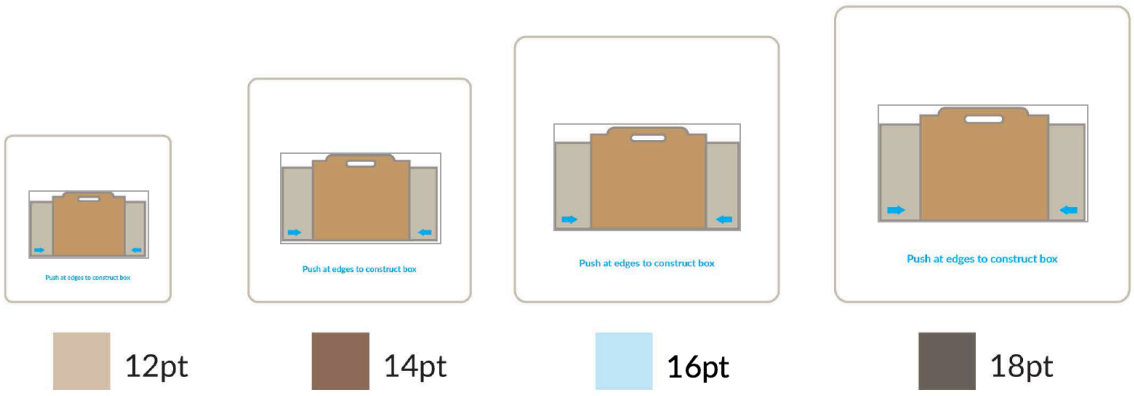

Figure 26 - Illustration of instructions size, (Brown, 2017)

4.8.3: Participants are asked if they liked the design of the instructions.

When participants are asked the question as to whether they liked the look of the instructions designed 100% of participants agreed and said that they did.

The participant's answers were recorded with the following positive comments found:

• Simple instructive colours and design style, very easy to understand.
• Easy to follow design with nice colour scheme
• Nice colour scheme and easy to understand.
• Nice colours and easy to understand.
• Easy to understand, looks like the box.
• Easy to understand, relates to the package.
• Easy to follow and good colour scheme
• Looks nice and clean, easy to follow.
• Nice design easy to understand
• Easy to understand and looks like the box.

Figure 27 - Participant opinions on instructions, (Brown, 2017)

At least 60% of respondents positively commented on the colours. As this is also a major point in the branding design this shows the overall colour and branding of the design gives a positive impression.

participants also commented that the instructions designed are easy to understand (70%). An easy to understand set of instructions aids usability and is a positive outcome supported by results in the timings from the usability test.

4.8.4: How easily did the participant load the package?

Participants are asked to load a pre-determined set of amazon packages into V.7.04. The researcher tested before hand to see whether they fit inside sufficiently. It was found that none of the participants performed this task with absolute ease and that all other participants experienced some form of difficulty. The researcher assessed the performance of participants and found they struggled for 2 main reasons.

1) the high sides of the boxes made the opening small so loading was difficult.

2) The attached lid on the packaging was in the way of the participants successfully loading the package with ease.

It is clear from these results that changes have to be made to the side of the package and the attached lid, as they are proving too difficult for the user to efficiently use the packaging.

4.8.5: Sealing the package

Participants of both groups (with and without instructions) [Figure 29] are observed sealing the package. They are observed on how easily they can locate the self adhesive tape underneath the lid. It was found that participants who had packages which contains instructions located the sealing tape much easier than participants who didn't have any instructions on their packaging. Those with instructions are observed to take less time and look in the right place than those who did not have instructions.

Level of difficulty	Easy - 1	2	3	4	Hard - 5
Instruction's	20%	80%	0%	0%	0%
No Instructions	0%	30%	40%	40%	0%

Figure 28 -Table of results for how easy participant found sealing the package (Brown, 2017)

Figure 29 -Photos of packaging with and without instructions (Brown, 2017)

4.8.6: How easy was it for the participant to use double sided tape on the package?

Participants are observed when using the double sided sticky tape located on the underside of the lid, It was found that 100% of participants easily used the sticky tape and knew exactly how to use this, whether or not their packaging contained instructions.

4.8.7: Opinions on the design

After carrying out the usability tests, each participant was asked what they liked about this particular design. 60% of participants commented that the package constructed easily. 40% of participants commented that packaging was structurally strong. Both of these comments are desirable traits for the packaging.

Comments made by participants
• Construction is quick and easy.
• The construction of the package is very easy to work and is very simple to use.
• Easy construction, nice feeling handle and strong
• Strong and nice central handle.
• Simple design that erects easily.
• Sturdy and simple to construct, doesn't take up much room when flat.
• Assembles easily
• looks recyclable and strong.
• Looks recyclable and holds a lot.
• Strong and assembles really easily.

Figure 30 - Table of comments made by particiapnts about the packaging (Brown, 2017)

Participants are then asked what they don't like about the design. 70% of participants disliked the lid design of the box. A further 20% side that the sides are too high and they get in the way of construction.

Comments made by participants
• The lid is a bit cumbersome and doesn't appear strong enough.
• The high sides made the package hard to load.
• Hard to fit things into the box
• The lid is a bit inconvenient.
• Hard to find things like the tape on the underside of the lid.
• The lid gets in the way.
• lid gets in the way a little bit.
•A little confusing on how to use properly
• The lid isn't seamless and you can see inside the package
• The lid is a little flimsy

Figure 31 - Table of problems participants found with packaging, (Brown, 2017)

5. Design & Development

This Chapter covers development of ideas and design concepts to reach a working prototype conclusion which meets the needs of the user.

5.1: Packaging Design

5.1.1: Materials

Through Literature review, sample collection and questionnaire it was concluded that the best material to use for the project would be a corrugated cardboard with a double wall EE flute adding strength and rigidity to the packaging design. An EE flute board would give the packaging a 3mm Thickness [Figure 32] which would still allow the packaging designed to fold flat. The researcher found that to add strength to the board it is possible to coat with an oil, this also adds protection both internally and externally from showers also protecting the contents.

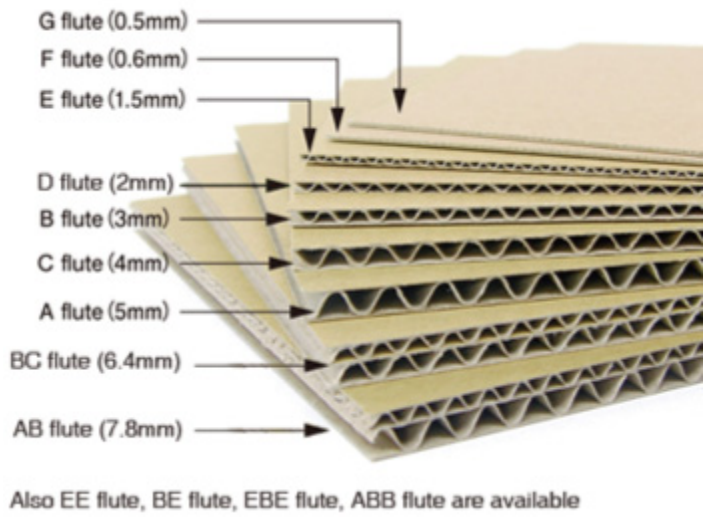

Figure 32 - Photo of flute profiles (Shanghai DE Printed Box 2018)

5.1.2: Adhesive

A recycling compatible adhesive (RCA) was chosen to glue the package together; this was found through literature review. The easiest recyclable adhesive is from a hot melt gun and this clumps together in the recycling process to be extracted at a later point (Bennett, 2015). The Adhesive strip should be made from an Eco friendly Double sided sealing tape made by stera tape (Gay, 2008) from a natural Cellulose, this adhesive strip would be 100% Bio-Degradable adding to the eco friendly design of the product. An industry standard paper packaging tape would be the best to seal the packaging. Featuring a natural gum adhesive, this is also 100% recyclable adding to the desired eco factor of the packaging.

5.1.3: Size of package

It was found by observation of click & collect lockers that the packaging should be of dimensions that fit the largest locker design. The locker dimensions 430mm (H) x 380mm(W) x 580mm (D). Therefore, 400mm(H) x 300mm(W) x 500mm(D) was decided allowing room for the package to fit in the locker with space for the user to remove the package.

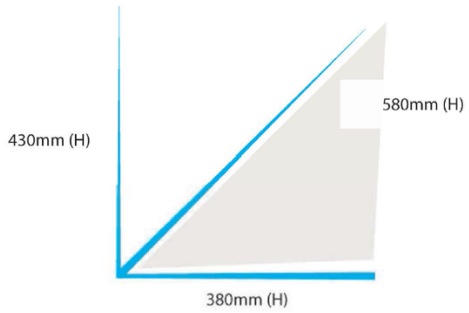

Figure 33 - Locker size illustration (Brown, 2017)

The packaging designed should be able to accommodate multiple purchases as results from questionnaire suggested a user is likely to buy multiple products at once. This enforces that the size of the locker should dictate the size of the package as multi channel retailers sell a large amount of products so developing a packaging system to fit all individually would be impossible.

5.1.4: Fold flat design

It was concluded through observation at Amazons Fulfilment centre that fold flat design would benefit the retailer by enabling easier storage solutions for the unused packaging. The researcher looked at packaging types which are easily erected for this reason. It was concluded that to benefit the stakeholder group of warehouse packer a design that could be assembled in as little time as possible would be preferred.

Figure 34 – 4 packages stacked on top of each other (Brown, 2017)

Figure 35 - packaging when folded flat (Brown, 2017)

5.1.5 Single piece net

The boxes net fits onto a standard single piece of board which can be die cut. This has benefits of offering little waste cardboard materials, which in turn decreases the environmental impact of manufacturing the package.

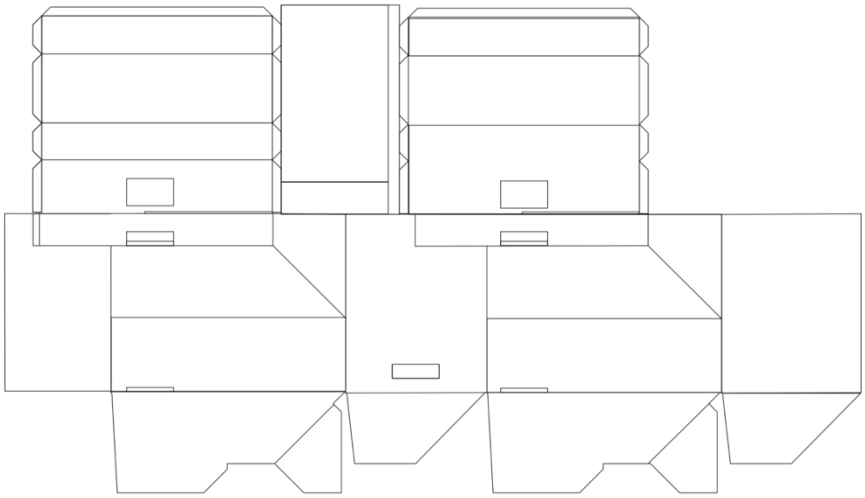

Figure 36 - single piece net design of packaging (Brown, 2017)

5.1.6: Cardboard zip opening

Although it was concluded through questionnaire results that a user's consideration of the importance of an easy to open packaging type was relatively low, it was thought that through collection of samples and literature review that there is a current trend for easy to open, 'frustration free' packaging. It was thought that this design element should therefore be included into the final design output.

Figure 37 - Cardboard zip found on amazon packaging (Brown, 2017)

5.1.7: Singular central handle

It was found by questionnaire that users see the benefit of having a singular handle when shopping, enabling the user to have 1 hand free at all times to perform other tasks, such as opening doors, holding hand rails or loading the package whilst carrying it.

Figure 38 - Usability test of handle (Brown, 2017)

5.1.8: Elimination of the attached lid

After review of comments on the final round of usability testing, it was decided that the attached lid had to be eliminated from the design as this feature had been causing problems for the user and loading the packaging. It was decided a re designed separate lid needed to be incorporated to fulfil this design problem.

5.2: Brand Development

5.2.1: Brand Name

A brand was developed using guidelines that would give a certain feel to the packaging “The brand name is the single most important element of packaging design, as it initiates the relationship between the brand and the target consumer” (Klimchuk 2006, P.188) There was an apparent need to tell the user exactly what the packaging was for setting aside any ambiguity of its use. The

key insights into the name are triggered by the packaging holds or contains a users purchase described by the word carton. The researcher combined the word 'Cari', an abbreviation of the word Carry which suggests to users that it is there to help them carry the contents. The brand name Caricarton was developed. The researcher feels that the name is a strong sounding name that contains and element of alliteration, making it easy to remember increasing its marketability. To support the brand guidelines, a stencil typeface 'Stardos-stencil' was chosen through secondary research methods similar to that often found on shipping containers but with a rounder, softer edge than a standard stencil typeface. This promotes the strength, stability and security. In turn installing the idea that the Caricarton will protect your purchases on the journey to their destination.

Caricarton

Figure 39 - Brand development photographs of researchers work (Brown, 2017)

It was decided through questionnaire that the colours of brown and blue would be used in the branding to promote security and give the notion of environmentally friendliness to the brand. A logo was developed which represents a person carrying a package single handed. It also emerged from the first 2 letters of the brand name and is a partial 'C' and 'A' from the stencil

typeface used. This was developed to be as simple as possible and when through several stages of ideation to come to the conclusion of the finished logo.

Figure 40 - Logo development (Brown, 2017)

5.2.2: Instructional Design

It was ascertained through usability testing methods that instructions used on the packaging increased successful usability allowing the user to erect and seal the packaging more efficiently. The instructions are developed inline with the look and feel of the brand using instructional design techniques found by sample collection and secondary research methods. Instructions are placed in areas on the packaging which do not detract from the overall design and are easy to find by the user. This was supported by Usability testing which concluded the

designed instructions supported the use of the packaging. The size of the instructions designed are chosen by conducting usability tests to determine the most popular size as per the preference of the user. The researcher developed instructions for aspects which were found to be less than easy for the user during usability testing. This would aid the ease and fluidity of use for the product and help to improve understanding of how to construct the package for the user.

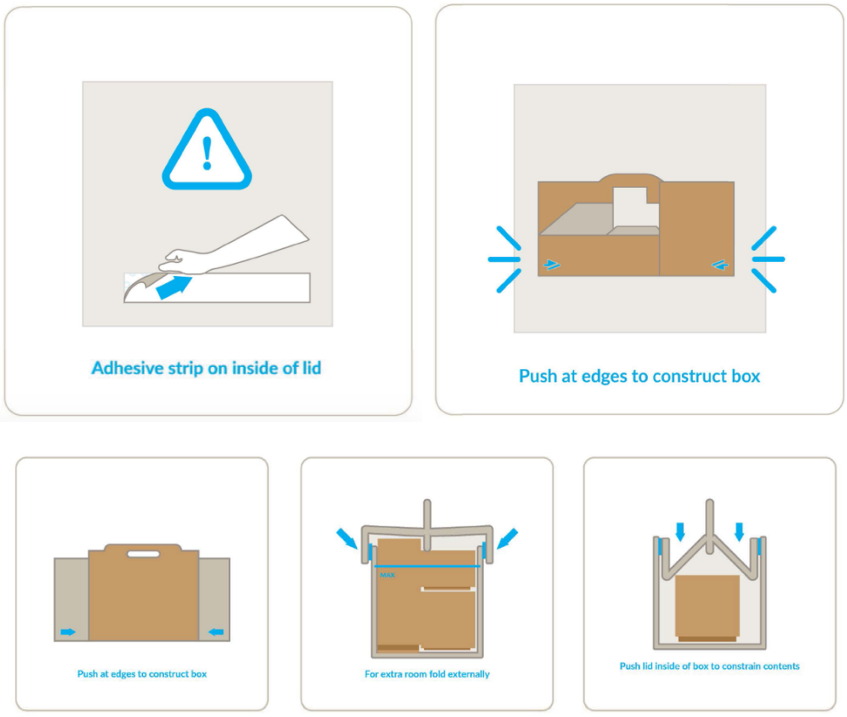

Figure 41 - Instructional design illustrations (Brown, 2017)

6: Evaluation

The final design was adapted throughout the project after evaluating the results of questionnaires and usability testing and developed with further tests until a level of satisfaction was reached and agreed by all participants. This evaluation was conducted after a final conclusion of the deign was reached.

The literature review provided a broad analysis on user centred design research practises. Concluding why we conduct this type of research and how we can successfully conduct the research to design better solutions benefiting the user. Unfortunately, the researcher found that the majority of User centred design works published related to the design of computer systems. Any techniques

found had to be translated to packaging design. Although this wasn't ideal, the researcher found that the techniques and findings are transferable to different design disciplines.

Literature review gave an insight into sustainability as a requirement in packaging design and showed an increasing concern among the British public. The researcher met the design brief with this primary thought. It was backed up by data from questionnaires and the conclusion that sustainability is the key to creating packaging in 2018, this was addressed with the final design.

It was decided that a brand should be developed that gave a clear indication as to the sustainability of the product. This was brought about by ideas from literature review of material selection and questionnaire results that provided insights of what participants associated with environmental products, mainly colour and material association.

Literature review indicated to the researcher that material selection should not only be sustainable, but provide strength for protection of the packages contents, a primary aim of a packaging design. It was determined through sample collection that the best material to use would be an EE flute corrugated cardboard. This material proved hard to manufacture on a small scale and this limitation meant any prototypes had to be hand cut rather than the prescribed construction method of die cutting.

Through Literature review and questionnaire analysis it was found that Amazon online shopping is becoming increasingly popular, it was decided that the packaging developed should incorporate this online seller as a major focal point in development of the packaging and the shopping process should be designed around the online journey at Amazon.co.uk, incorporating their recent shopping strategy of involving click & collect lockers along the user's journey.

It was determined that the package designed should aid the user in the shopping process. Questionnaire results suggest that multiple purchases of online shopping are becoming a problem with transportation from a collection point.

It was observed that when collecting multiple items from a click & collect point the user had to use more than one locker. A multiple purchase packaging type would eliminate this, thus saving the user time.

Research methods are adapted in accordance with user centre design techniques found through literature review and it was determined that questionnaires, market research, prototyping, observations and usability testing would be invaluable research techniques to use in this project.

The questionnaires conducted had a sufficient sample pool of mixed demographics with a large number of participants and a high response rate that gave quantifiable and valuable data to the project. some data could be compared with past results from secondary research of a similar topic. One criticism of the questionnaires could be that a different set of participants are used each time leading to some conflicting data. If the researcher was to conduct this research again he would ensure that the participants are the same for the second questionnaire eliminating these conflicting results. Overall the data obtained gave a useful insight into the user and how best to design a packaging system to benefit them.

Observation techniques were conducted in accordance with literature review, it was determined that the researcher should record the users journey. It was decided that observations should be made at an Amazon fulfilment centre, a Royal mail collection office and an Amazon collection locker. These gave valuable insight into the journey of the proposed packaging and assessed the feasibility of the overall design. The Amazon locker dictated the overall size of the packaging to be developed, whilst the Fulfilment centre showed the researcher the needs of various stakeholders enforcing the need for a fold flat and stackable design whilst also promoting a fast assembly of the packaging type. The Royal mail collection office enforced the belief of the researcher that this type of queueing collection system is becoming less favourable to the user the researcher has forecast this to become obsolete.

Market research and sample collection of different packaging types supported

material selection from literature review and questionnaire results. This confirmed that users prefer lightly branded packaging of a material that appears recyclable leading to some ambiguity of contents. It was found that although participants in questionnaire responded that easy to open packaging wasn't high on their preferences, sample collection suggested that the option of a cardboard zip is becoming increasingly popular and was found on the majority of packaging received by the researcher. This prompted the researcher to ignore results from questionnaire for this particular element and include a cardboard zip in the final design.

It was found that many iterations of prototyping are needed to form a final design conclusion for the project and to reach a satisfactory position to be able to conduct a successful usability test scenario. Limitations of production meant that hand cutting of prototypes was very time consuming, which not only lead to some user error when cutting straight lines but also gave an imperfect product. If the research project was to be conducted again, a digital cutter should be acquired to perform iterations of prototypes, this would reduce the time needed and produce exact models resulting in perfect folds and production ready prototypes aiding aesthetics and functionality of the overall design.

Materials used in prototyping and production are also not the final chosen material, it was too hard to replicate the chosen material at such a low quantity as it is not easily obtainable without specific manufacture. This lead to the prototypes not being as strong as the proposed final design. This could also have lead to the product being of slightly different size to to the final design increasing user dissatisfaction which would not be present in the final production of the product. If this project would to be developed further, the researcher could source better materials from which to make final prototypes from, limitations prevented this.

Instructions are designed to aid the user in problems perceived through usability testing. It was found that users struggled to assemble the packaging and find the sealing strip. Instructions were developed along with brand guidelines through literature review which aided the user in performing these tasks. It was found

through usability testing that when a user was supplied with the packaging instructions their understanding was aided and the time it took to operate the packaging decreased making it easier for the user.

Usability testing was conducted over 2 stages and iterations are honed after findings from each. Feedback from participants is overall positive, and where it was found substandard changes are made. Major changes needed to be made after results of final usability tests as it was found that users still encountered some problems with the physical design. Mainly loading of the packaging caused some problems due to the lid design and high sides of the package. These were changed due to feedback and a separate lid was designed along with alterations to the sides of the packaging eliminating these problems. The project could benefit from a further round of usability testing after these change to the design were made to ensure that they increased the Usability of the packaging.

7: Conclusion

The project aim was to design and develop a packaging which adheres to principals of best practice in ecommerce shopping. To achieve this a complete packaging system was realised using user centred design research methods. It is concluded that the way we shop online is changing and so must the design of a packaging to support this. We have started once again not to rely on purchases to be delivered straight to our door, but to collect them whilst we are doing something else. This may either be on our commute or at another convenient location which we often frequent, such as the supermarket.

During these times of environmental awareness, a consciousness is being raised that a packaging has a requirement and the population has an obligation to be kind to the environment. Choosing a packaging design which supports these values has become a major purchase decision and is being adopted as a key motivator by the general population. This should also be included in modern packaging design principals as more and more governments are employing legislations and providing incentives to large corporations to support this.

Insights such as chosen materials, look of design, colours of graphics, branding design and instructions chosen have been generated using primary research techniques of questionnaires and usability testing to conclude the final design. It was decided that the final design would aid the ease of carrying for the user, protect the users purchases and be easy for the user to operate, whilst installing notions of environmentally friendliness and security.

It was concluded during observation that the design should also benefit other key stakeholders to the project, including Warehouse packers, the easily constructed design would shave seconds on the construction of every package increasing the output by each warehouse worker. Couriers, the stackable design of the package which allows the handle to fit in the recess of the crash lock enables the parcels to stack efficiently, it was observed that this was a main requirement of the couriers upon leaving Amazons warehouse. Warehouse managers, the fold flat design enables a large amount of the packages to be stored whilst taking up minimal space as well as aiding a shopper in carrying multiple purchases to their final destination by proving an easy to carry packaging solution.

The usability testing drew design conclusions for major improvements, it was concluded that the connected lid in earlier prototypes was unnecessary and a hindrance to loading the packaging. This had since been omitted from the final design and it is concluded it was improved immensely from this removal.

The designed instructions help with usability of design and incorporated in such a way that they both support the overall branding and located in an easy enough to spot location that is in an aesthetically pleasing location which enhances the design. This was supported using the final stages of usability testing which showed it decreased construction time of the package.

This research has successfully created an e-commerce packaging for shopping habits in 2018. A packaging type has been developed that is beneficial to all stakeholders involved with e-commerce shopping. From the warehouse packers

and private shoppers in a supermarket to the end user that actually collects their shopping from the locker itself. Every users journey has been considered in an effort to develop the most suitable packaging to this type of shopping. It has been designed and developed for multiple item shopping online. Research has shown that this is a viable near future concept with implementation just around the corner. The design takes into account the ease of usability, environmental impact and aesthetical priorities. The researcher feels that a viable product has been concluded and that is easy to understand and operate, whilst giving environmentally ethical impressions to the user. The researcher believes the design of a product shouldn't make the user think, but become second nature. The design has been created to be as intuitive as possible, easy to use for each and every person. Iterations and improvements have been made at every stage taking into consideration user feedback and tailored to each user's preference to develop this successful packaging type.

Figure 42 - Finished packaging design (Brown, 2017)

7.1: Further recommendations

It is recommended that further research into materials as a sustainability issue is to be regarded as a main focus when developing a packaging type. It is thought that notions of sustainability increase the preference of a user to invest in a brand and use a design. Recommendations as to material sourcing should be researched further to create a sustainable and desirable product and an inquest into sustainable manufacturing processes is also beneficial in developing a sustainable packaging type.

Although this project explored User centred design techniques to develop and understand positive aspects for the user. it is understood that User centred design among other design disciplines other than computer system design is an emerging field and parallels may need to be drawn when conducting research of this type in relation to packaging design. It is recommended that anyone using these research guidelines is aware that the techniques have traversed from alternative disciplines.

The ideas developed in this project could be used in other areas of shopping, not only could they be used in an online scenario, it is evident that it would be possible to incorporate this packaging as a reusable take home shopping cart/basket contributing to the elimination of plastic bags at the checkout. Amazon has since launched a service called Amazon pantry which works on a percentage of box filled scenario, this application could have exciting potential for the packaging and is considered to be an ideal application for this packaging type. It is recommended that these applications be explored further as a potential for the developed packaging.

Figure 43 - Amazon pantry box percentage (Amazon 2018)

7.2: Further research

The research has lead to ask how would user centred design approaches be adapted more to suite a packaging design discipline. Are the techniques outlined in this research project conducted in the best possible way to suit this type of design?

An area of further research could explore how the user would reuse the packaging, it would be interesting to understand after initial use how a user would then either dispose of the product, would the user recycle the product? Or would the packaging be re-used in an alternative scenario? Research has shown that notions of sustainability are a positive for the user, but this doesn't mean that the user would then take steps to re-use or recycle.

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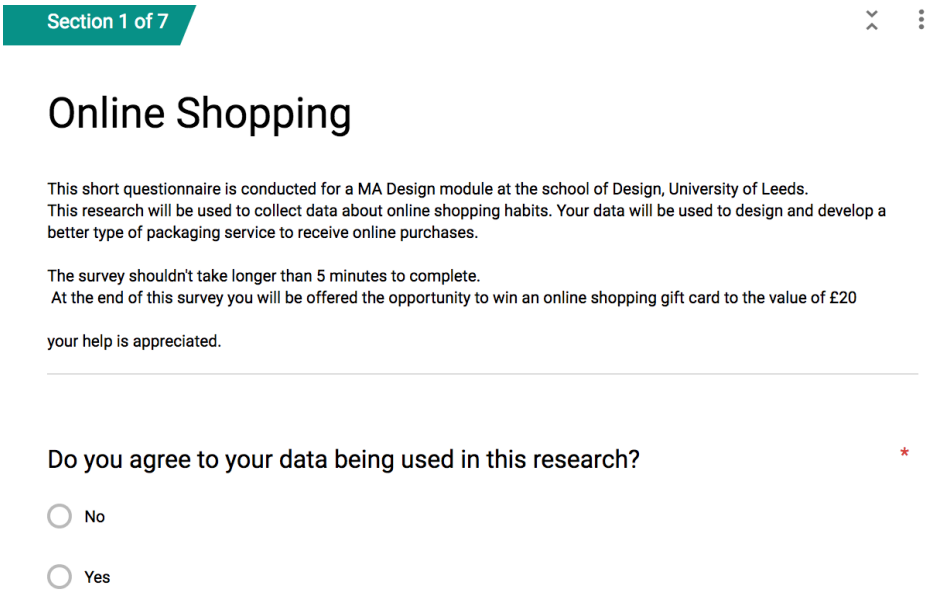
Appendices

Appendices Questionnaire 1 Questions



Section 1 of 7

Online Shopping

This short questionnaire is conducted for a MA Design module at the school of Design, University of Leeds.
This research will be used to collect data about online shopping habits. Your data will be used to design and develop a better type of packaging service to receive online purchases.

The survey shouldn't take longer than 5 minutes to complete.
At the end of this survey you will be offered the opportunity to win an online shopping gift card to the value of £20

your help is appreciated.

Do you agree to your data being used in this research? *

- No
- Yes

Section 2 of 7

About you

Description (optional)

What is your age? (Tick one.) *

- 18 - 24
- 25 - 34
- 35 - 44
- 45 - 50
- 50+

Which best describes your occupation? (Tick one.) *

- Self employed
- Student
- Unemployed
- Employed (Public sector)
- Employed (Private Sector)
- Other...

What is your average annual income? (Tick one.) *

- below £18k
- £18k - £24k
- £25k - £32k
- £33k - £50k
- £50k +
- prefer not to say

Your online shopping habits.

Description (optional)

How often do you shop online? (Tick one.) *

- ○ Every day
- ○ 5 - 6 times a week
- ○ 2 - 4 times a week
- ○ Once or twice a week
- ○ Less than once a week
- ○ Less than twice a month
- ○ I don't shop online

Which of the following sites are you most likely to purchase from? (Tick one.) *

- ○ Ebay
- ○ Amazon
- ○ Dedicated Brand website. (Sells their own products)
- ○ I do not purchase online
- ○ Argos
- ○ Supermarket website
- ○ Other...

What type of products do you buy online? (Choose multiple.) *

- ☐ Electronics
- ☐ Clothes
- ☐ Groceries
- ☐ Books
- ☐ Services
- ☐ Subscriptions
- ☐ Other...

Receiving your online shopping

Description (optional)

Which of these couriers have you received deliveries of online purchases from? (Choose multiple.)

- [ ] Royal mail (National post service)
- [ ] Fedex
- [ ] DPD
- [ ] TNT
- [ ] UK Mail
- [ ] Hermes
- [ ] inPost
- [ ] UPS
- [ ] Amazon
- [ ] Yodel
- [ ] Other...

When you buy online where do you most often have your purchase delivered? (Tick one.)

- ( ) Home
- ( ) Work
- ( ) Click & Collect at store
- ( ) Family or neighbours house
- ( ) Click & Collect at a locker
- ( ) Other...

Click & collect lockers are a new way to receive your online purchases. Perhaps while you are out. They are often available in supermarkets or train stations. Does this idea interest you?

- ○ yes
- ○ no
- ○ maybe

What would interest you about the lockers?

Short answer text

Your shopping experience

Description (optional)

Have you ever experienced any of these problems when buying online? (Choose Multiple.) *

- ☐ Slow Delivery
- ☐ Over packaged
- ☐ Under packaged
- ☐ High delivery charges
- ☐ Went missing / stolen
- ☐ Arrived damaged
- ☐ Had to collect from elsewhere.
- ☐ Returned to delivery depot
- ☐ Returned to sender
- ☐ Too hard to open
- ☐ Other...

Would a bad experience receiving a package make you seek an alternative supplier? *

- ◯ Yes
- ◯ No
- ◯ Maybe

When shopping online, how important is ease of opening a product. *

	1	2	3	4	5	
Not very important	◯	◯	◯	◯	◯	Very important

When shopping online, how important is easily returning a unwanted product *

	1	2	3	4	5	
Not very important	◯	◯	◯	◯	◯	Very important

Section 6 of 7

Packaging and the internet

Description (optional)

When you receive a package, which would you prefer? (Tick one)

- ◯ Unbranded boxes

- ◯ Lightly branded boxes

- ◯ Heavily branded boxes

Why would you prefer that type of packaging?

Short answer text

Which of these factors are important to you about the online packaging you receive? (Choose multiple.) *

- [ ] Strong
- [ ] Quality of materials
- [ ] Easy to carry
- [ ] Fits your purchase well.
- [ ] Protects my purchase
- [ ] I know where it has come from
- [ ] Discreet
- [ ] Not over packaged
- [ ] Sustainable / environmentally friendly

Section 7 of 7

You're finished!

To say thank you for your participation, I would like to offer you the opportunity to win a £20 Amazon gift card.
A participant will be selected at random before the 1st July 2017.
If you would like to be entered please leave your email address kindly.

Email address (Optional)

Short answer text

102 responses

Not accepting responses

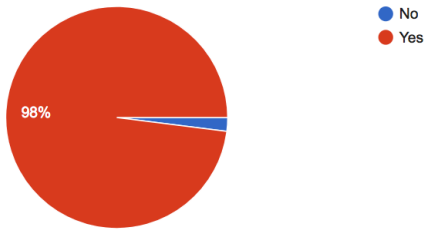
Message for respondents

This form is no longer accepting responses

SUMMARY INDIVIDUAL

Do you agree to your data being used in this research?

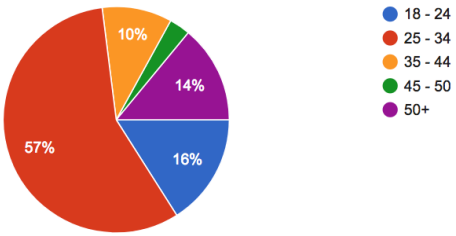
100 responses



About you

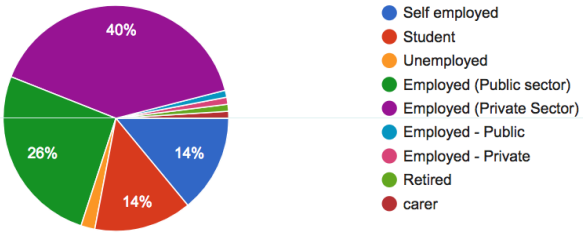
What is your age? (Tick one.)

100 responses



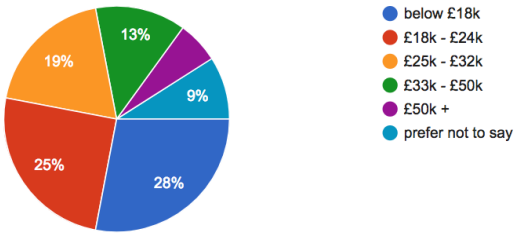
Which best describes your occupation? (Tick one.)

100 responses



What is your average annual income? (Tick one.)

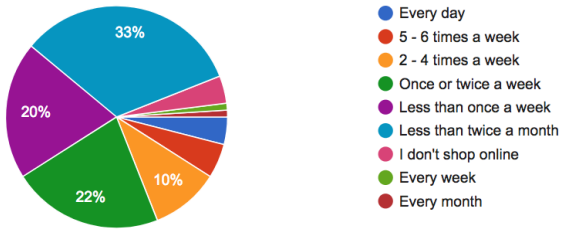
100 responses



Your online shopping habits.

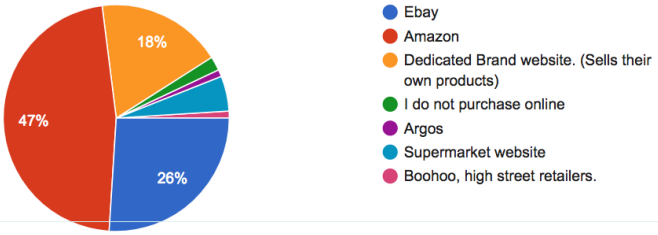
How often do you shop online? (Tick one.)

100 responses



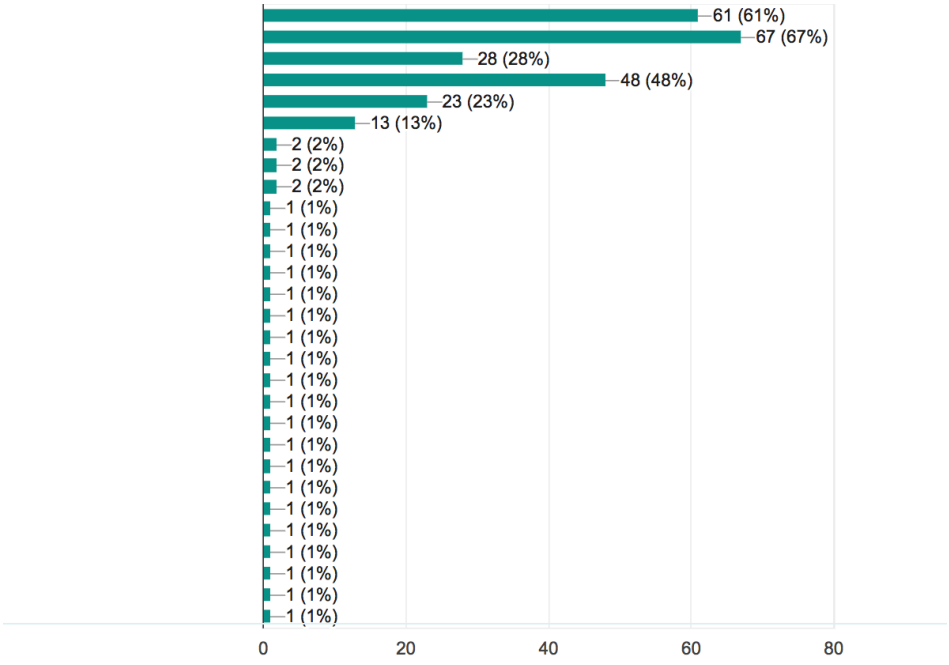
Which of the following sites are you most likely to purchase from? (Tick one.)

100 responses



What type of products do you buy online? (Choose multiple.)

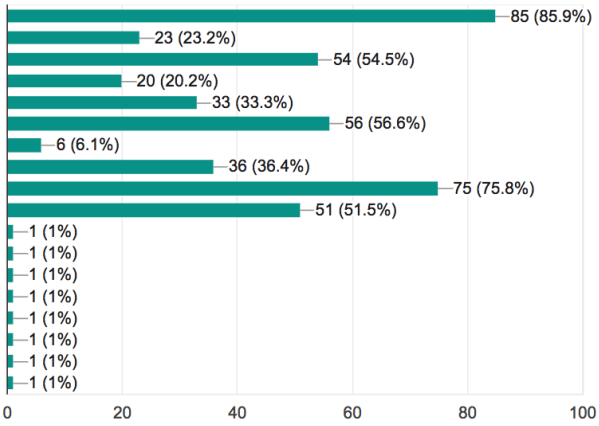
100 responses



Receiving your online shopping

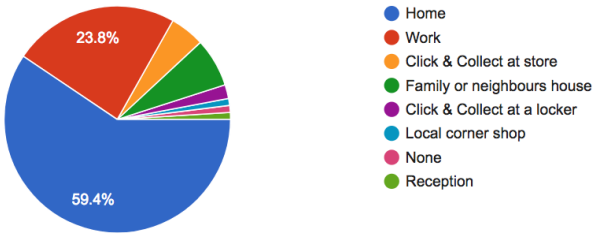
Which of these couriers have you received deliveries of online purchases from? (Choose multiple.)

99 responses



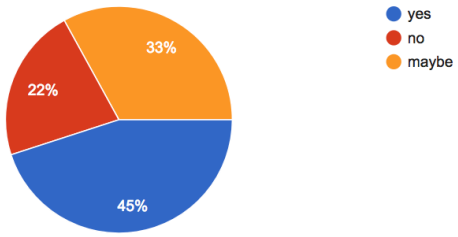
When you buy online where do you most often have your purchase delivered? (Tick one.)

100 responses



Click & collect lockers are a new way to receive your online purchases. Perhaps while you are out. They are often available in supermarkets or train stations. Does this idea interest you?

100 responses



What would interest you about the lockers?

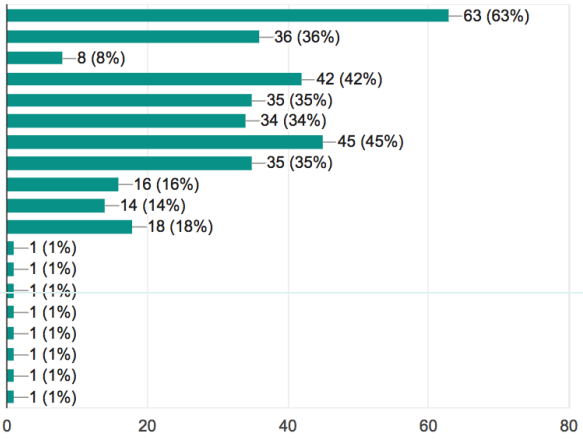
72 responses

Availability (2)
Convenient (2)
If I had nowhere safe for the delivery driver to leave my package if I was not at home. (2)
convenient (2)
Convenience (2)
Easy access. Easy delivery. (2)
Convenience (2)
y
Easy
Nothing
Ease of collecting at later/earlier than shop open
i would use it in case i don't have an address to deliver to.

Your shopping experience

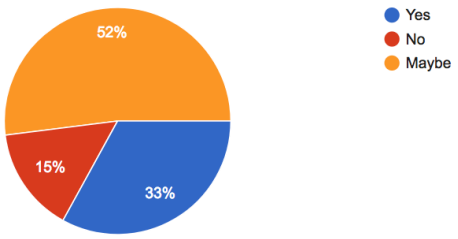
Have you ever experienced any of these problems when buying online? (Choose Multiple.)

100 responses



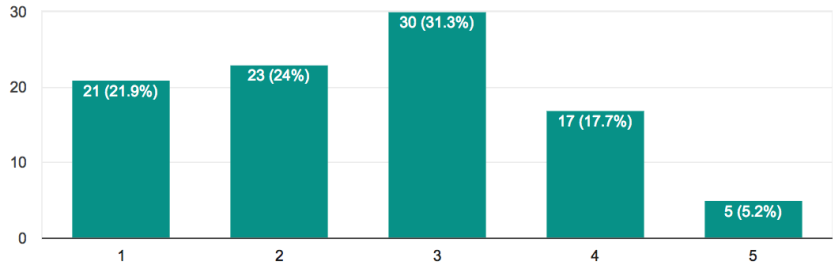
Would a bad experience receiving a package make you seek an alternative supplier?

100 responses



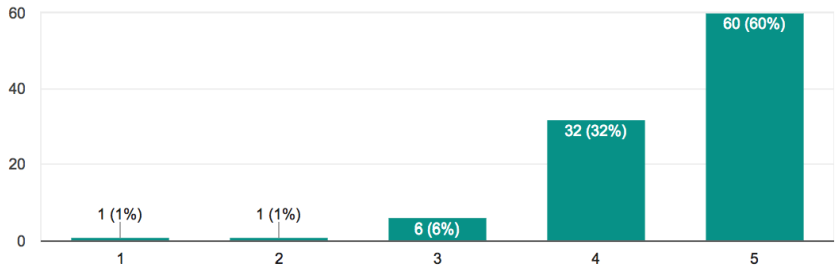
When shopping online, how important is ease of opening a product.

96 responses



When shopping online, how important is easily returning a unwanted product

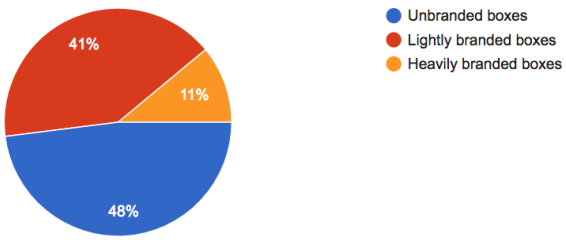
100 responses



Packaging and the internet

When you receive a package, which would you prefer? (Tick one)

100 responses



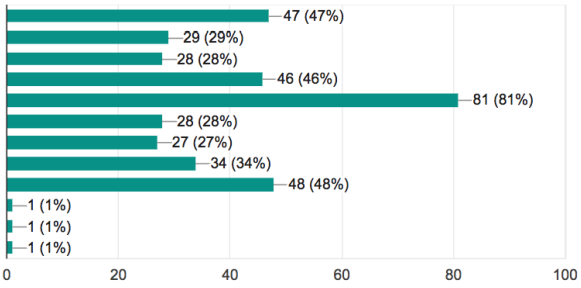
Why would you prefer that type of packaging?

81 responses

More discreet (2)
Indication of sender (2)
Privacy (2)
More attractive (2)
Inconspicuous, you dont know exactly what is in the parcel,
discreet
People cannot tell if it's expensive
Know what it is before opening
If a present recipient can't see where parcel from
it communicated to me to know where the package is from (like amazon). Minimal is best, no need for too much details
So I know where the item has come from incase I've ordered a few different things from different companies.
Gives the impression that it is a better quality item

Which of these factors are important to you about the online packaging you receive? (Choose multiple.)

100 responses



101 responses

Not accepting responses

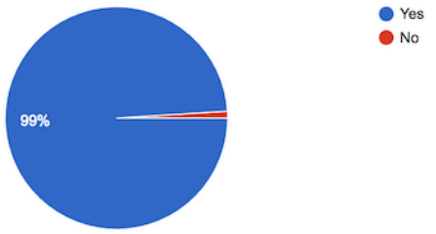
Message for respondents

This form is no longer accepting responses

SUMMARY | INDIVIDUAL

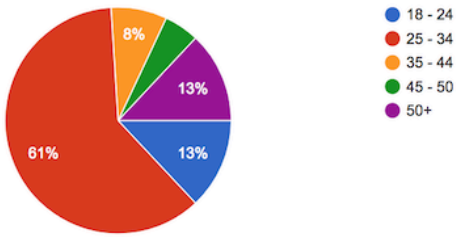
Do you agree to your data being use in this research?

101 responses



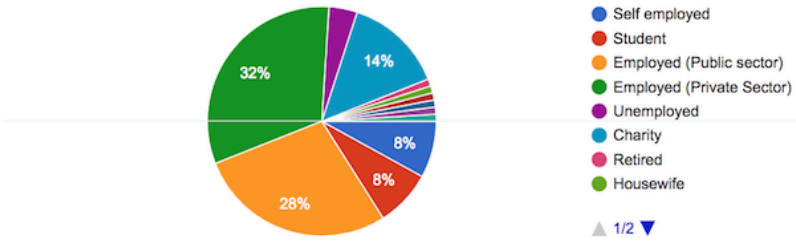
What is your age? (Tick one.)

100 responses



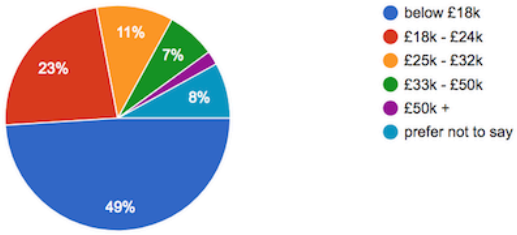
Which best describes your occupation? (Tick one.)

100 responses



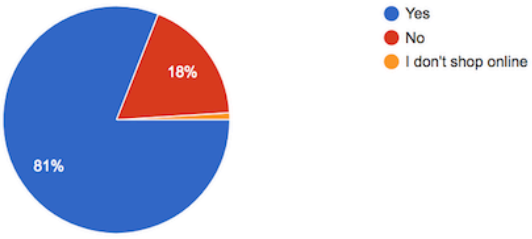
What is your average annual income? (Choose one)

100 responses



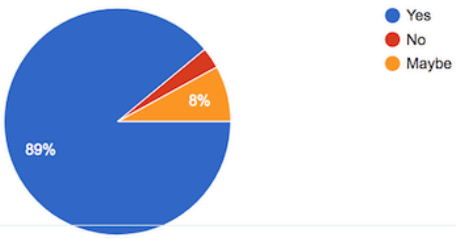
When you shop online do you often buy more than one item at a time? (Choose one)

100 responses



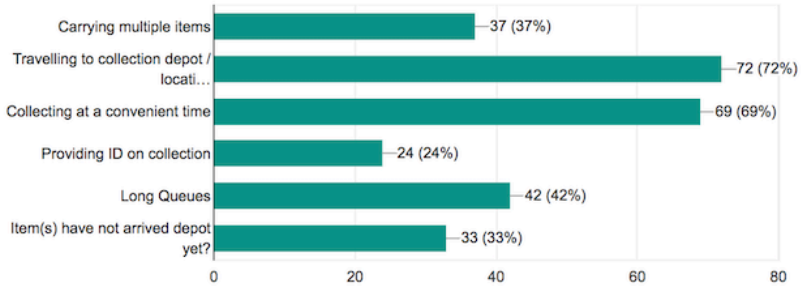
Would you want your items to arrive at the same time? (Choose one)

100 responses



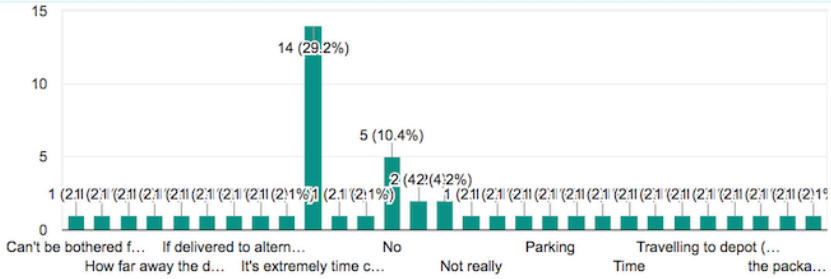
If you had to collect your items, what problems might you encounter? (Choose multiple)

100 responses

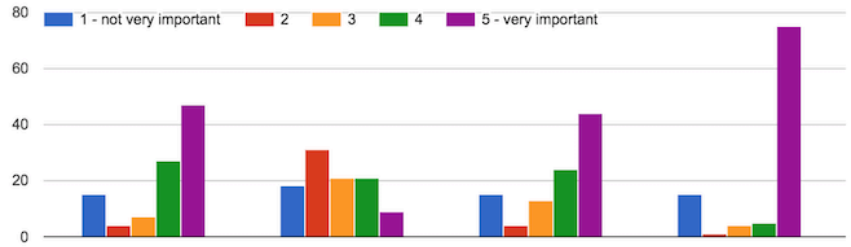


Can you think of any other problems you might have when collecting packages?

48 responses



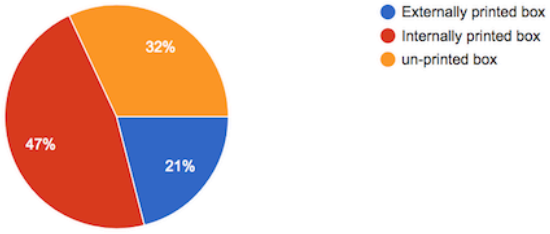
This question is about your preferences when it comes to online packaging, from the following options please rank how important the following is to you. 1 not very important - 5 is very important.



The look of packaging

Which package do you prefer the look of? (Choose one)

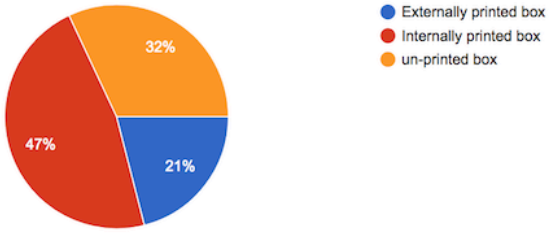
100 responses



The look of packaging

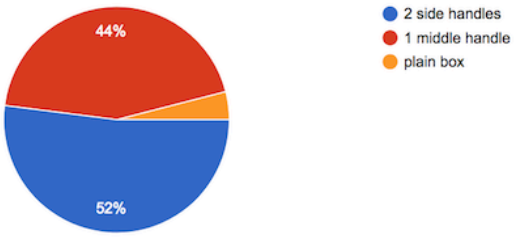
Which package do you prefer the look of? (Choose one)

100 responses



Which type of packaging looks easiest to carry? (Choose one)

100 responses



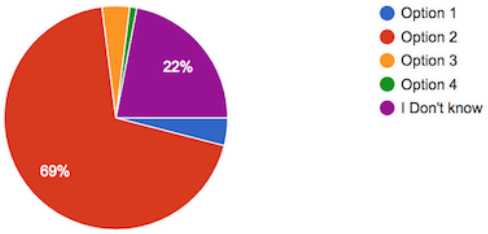
Why do you think this?

100 responses

I can hold the load closer to my body and cause less strain to my back and arms as it's weight is more evenly distributed. Also the middle handle looks likely to rip and no handles looks extremely difficult to grip properly. (14)
I dont want advertising on packing as it is costly, ease of carrying (2)
Can carry with one hand (2)
I wouldn't trust the middle handle not to break (2)
Middle handle looks flimsy, no handles harder to carry
Easier to pic up
Easier to carry and keeps contents secure
Has an handle
Easier to manage
Then I still have one hand free
Looks stronger and less likely to have handle snap off and can distribute weight evenly when carrying
Ease of carrying

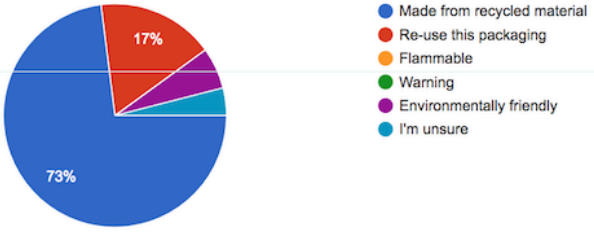
When found on a box, which symbol would you expect to mean push in at the sides. (Choose one)

100 responses

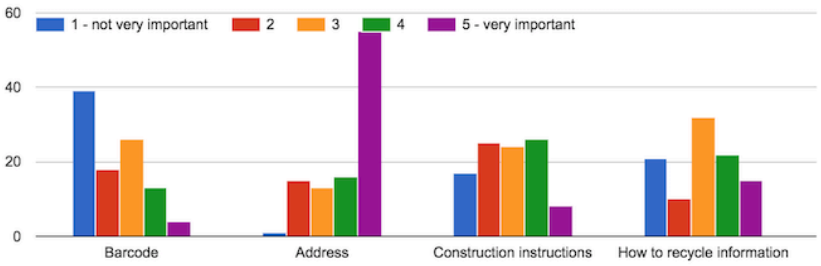


What does this symbol mean when found on packaging? (Choose one)

100 responses



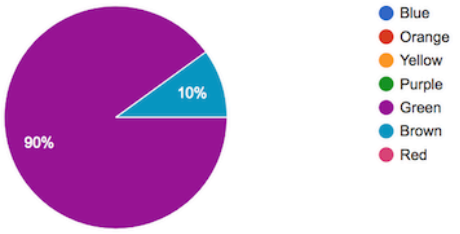
This question is about how important information on your packaging is, please rate how important these things are to you. 1 not very important - 5 is very important.



Colour Association

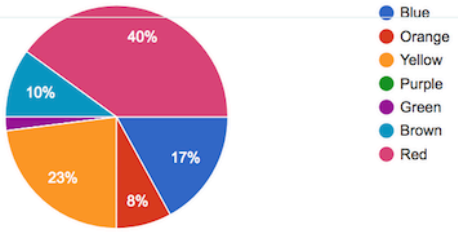
Which colour do you mostly associate with being environmentally friendly? (Choose one)

100 responses



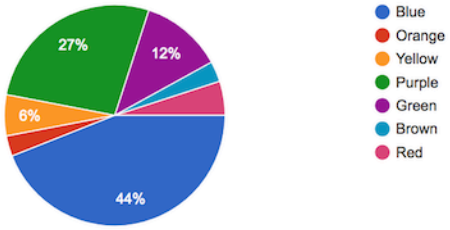
Which colour do you mostly associate with security? (Choose one)

100 responses



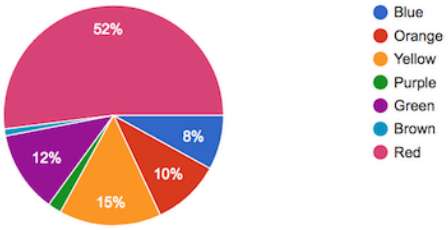
Which colour do you mostly associate with trust? (Choose one)

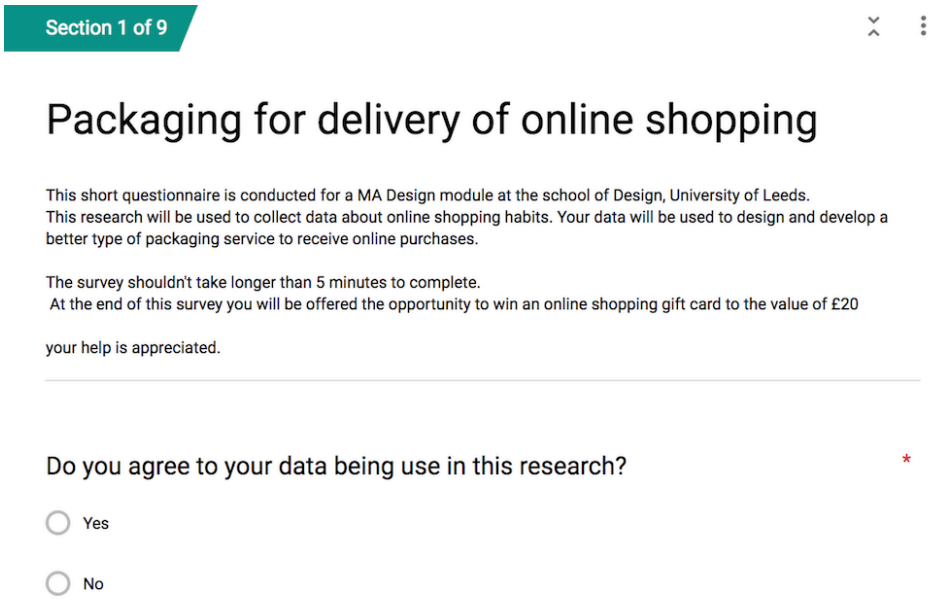
100 responses



Which colour do you mostly associate with speed? (Choose one)

100 responses





Section 1 of 9

Packaging for delivery of online shopping

This short questionnaire is conducted for a MA Design module at the school of Design, University of Leeds.
This research will be used to collect data about online shopping habits. Your data will be used to design and develop a better type of packaging service to receive online purchases.

The survey shouldn't take longer than 5 minutes to complete.
At the end of this survey you will be offered the opportunity to win an online shopping gift card to the value of £20

your help is appreciated.

Do you agree to your data being use in this research? *

- Yes
- No

Section 2 of 9

About you

Just a few impersonal details for demographic data collection.

What is your age? (Tick one.) *

- 18 - 24
- 25 - 34
- 35 - 44
- 45 - 50
- 50+

Which best describes your occupation? (Tick one.) *

- Self employed
- Student
- Employed (Public sector)
- Employed (Private Sector)
- Unemployed
- Other...

What is your average annual income? (Choose one) *

- below £18k
- £18k - £24k
- £25k - £32k
- £33k - £50k
- £50k +
- prefer not to say

Online Shopping

Description (optional)

When you shop online do you often buy more than one item at a time? (Choose one) *

- ○ Yes
- ○ No
- ○ I don't shop online

Would you want your items to arrive at the same time? (Choose one) *

- ○ Yes
- ○ No
- ○ Maybe

If you had to collect your items, what problems might you encounter? (Choose multiple) *

- ☐ Carrying multiple items
- ☐ Travelling to collection depot / location
- ☐ Collecting at a convenient time
- ☐ Providing ID on collection
- ☐ Long Queues
- ☐ Item(s) have not arrived depot yet?

Can you think of any other problems you might have when collecting packages?

Short answer text

Packaging preferences

Description (optional)

This question is about your preferences when it comes to online packaging, from the following options please rank how important the following is to you. 1 not very important - 5 is very important. *

	1 - not very impor...	2	3	4	5 - very important
Strength of packa...	○	○	○	○	○
Ease of construct...	○	○	○	○	○
Fits contents well	○	○	○	○	○
Protects Contents	○	○	○	○	○
Cost of packagin...	○	○	○	○	○
Ease of carrying ...	○	○	○	○	○
Ease of opening p...	○	○	○	○	○
Inconspicuous co...	○	○	○	○	○
Packaging can be...	○	○	○	○	○
Packaging is mad...	○	○	○	○	○

Section 5 of 9

The look of packaging

Description (optional)

Which package do you prefer the look of? (Choose one) *

- Externally printed box

- Internally printed box

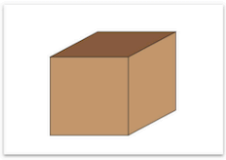
- un-printed box

Which type of packaging looks easiest to carry? (Choose one) *

- 2 side handles

- 1 middle handle

- plain box



Section 6 of 9

Packaging Symbols

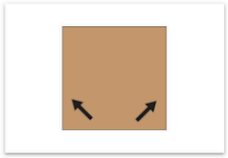
Description (optional)

When displayed on a box, what does this symbol mean? (Choose one) *

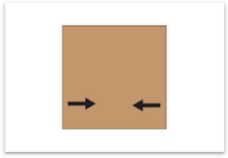
- This way up
- Upside down
- Lift from the bottom
- Easy to carry
- Don't know

When found on a box, which symbol would you expect to mean push in at the sides. (Choose one) *

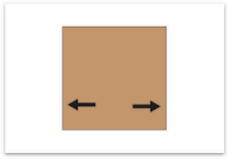
- Option 1



- Option 2



- Option 3



- Option 4

- I Don't know

What does this symbol mean when found on packaging? (Choose one)

- ○ Made from recycled material
- ○ Re-use this packaging
- ○ Flammable
- ○ Warning
- ○ Environmentally friendly
- ○ I'm unsure

Section 7 of 9

Section title (optional)

Description (optional)

This question is about how important information on your packaging is, please rate how important these things are to you. 1 not very important - 5 is very important. *

	1 - not very impor...	2	3	4	5 - very important
Barcode	○	○	○	○	○
Address	○	○	○	○	○
Construction instr...	○	○	○	○	○
How to recycle in...	○	○	○	○	○
Sender details	○	○	○	○	○
Advertising	○	○	○	○	○
Information abou...	○	○	○	○	○

Colour Association

Description (optional)

Which colour do you mostly associate with being environmentally friendly? * (Choose one)

- Blue

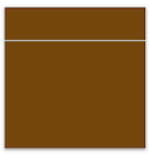
- Orange

- Yellow

- Purple

- Green

- Brown



- Red

Which colour do you mostly associate with security? (Choose one) *

Blue

Which colour do you mostly associate with trust? (Choose one) *

Which colour do you mostly associate with speed? (Choose one) *

Section 9 of 9

You're Finished!

To say thank you for your participation, I would like to offer you the opportunity to win a £20 Amazon gift card.
A participant will be selected at random before the 15th August 2017.
If you would like to be entered please leave your email address kindly.

Email Address (Optional)

Short answer text

Your Comments (Optional)

Long answer text

Observation of Participant constructing Box

Description (optional)

How well did the participant construct the box from flat? *

	1	2	3	4	5	
Easy	○	○	○	○	○	Difficult

Usability test

- [ ] Understands the task, but can't complete it within a reasonable time
- [ ] Understands the goal, but has to try different approaches to complete the task.
- [ ] Gives up or resigns from the process.
- [ ] Completes the task, but not the task that was specified.
- [ ] Expresses surprise or delight.
- [ ] Expresses frustration, confusion or blames themselves for not being able to complete the task.
- [ ] Asserts that something is wrong or doesnt make sense
- [ ] Makes a suggestion for the interface or flow of events.

Notes

Long answer text

Observation of Participant Using lid of box

Description (optional)

How did the participant use the lid?

- ○ Internally
- ○ Externally

How easily did the participant Make use of the lid? *

	1	2	3	4	5	
Easy	○	○	○	○	○	Difficult

Usability test

- ☐ Understands the task, but can't complete it within a reasonable time
- ☐ Understands the goal, but has to try different approaches to complete the task.
- ☐ Gives up or resigns from the process.
- ☐ Completes the task, but not the task that was specified.
- ☐ Expresses surprise or delight.
- ☐ Expresses frustration, confusion or blames themselves for not being able to complete the task.
- ☐ Asserts that something is wrong or doesnt make sense
- ☐ Makes a suggestion for the interface or flow of events.

Notes

Long answer text

Observation of Participant using adhesive tape

Description (optional)

Did the Participant find the adhesive strip? *

	1	2	
Yes	○	○	No

Did the Participant know what to do with the adhesive strip? *

	1	2	
Yes	○	○	No

Usability test

- [ ] Understands the task, but can't complete it within a reasonable time
- [ ] Understands the goal, but has to try different approaches to complete the task.
- [ ] Gives up or resigns from the process.
- [ ] Completes the task, but not the task that was specified.
- [ ] Expresses surprise or delight.
- [ ] Expresses frustration, confusion or blames themselves for not being able to complete the task.
- [ ] Asserts that something is wrong or doesnt make sense
- [ ] Makes a suggestion for the interface or flow of events.

Notes

Long answer text

Observation of participant using handle.

Description (optional)

How did the participant seem with using the handle? *

	1	2	3	4	5	
Pleased	○	○	○	○	○	Displeased

How did the participant find the handles strength? *

	1	2	3	4	5	
Strong	○	○	○	○	○	Weak

Usability test

- [ ] Understands the task, but can't complete it within a reasonable time
- [ ] Understands the goal, but has to try different approaches to complete the task.
- [ ] Gives up or resigns from the process.
- [ ] Completes the task, but not the task that was specified.
- [ ] Expresses surprise or delight.
- [ ] Expresses frustration, confusion or blames themselves for not being able to complete the task.
- [ ] Asserts that something is wrong or doesnt make sense
- [ ] Makes a suggestion for the interface or flow of events.

Notes

Long answer text

Section 6 of 6

What was the participants overall feedback of the box construction.

Did the participant make any noteworth comments

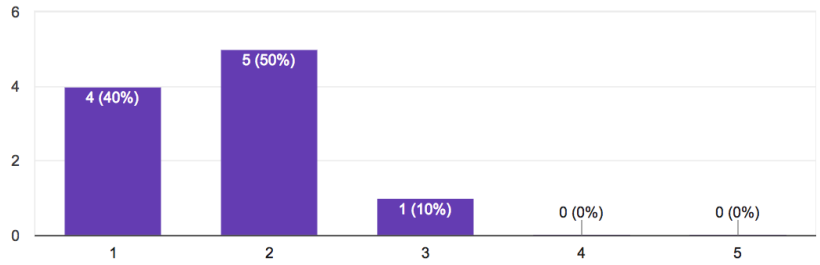
Notes

Long answer text

Observation of Participant constructing Box

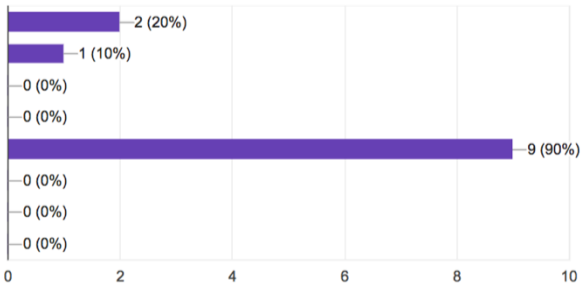
How well did the participant construct the box from flat?

10 responses



Usability test

10 responses



Notes

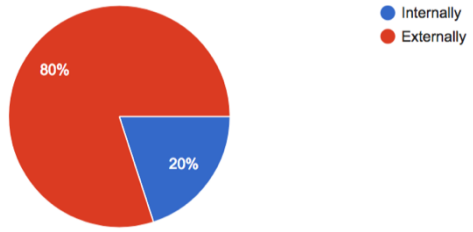
10 responses

Participant constructed the box easily and commented "That was easy."
found constructing the box from flat very easy.
Participant had no problems constructing the box
Participant took a little longer than desired to construct the box
Found the box constructed easily
Found box construction really easily.
did not notice the arrows on the side of box, tried pulling apart.
found it easy and used correct approach
found the box popped up easily, commented that they found it easy.
Found very easy to construct from flat and followed instructions

Observation of Participant Using lid of box

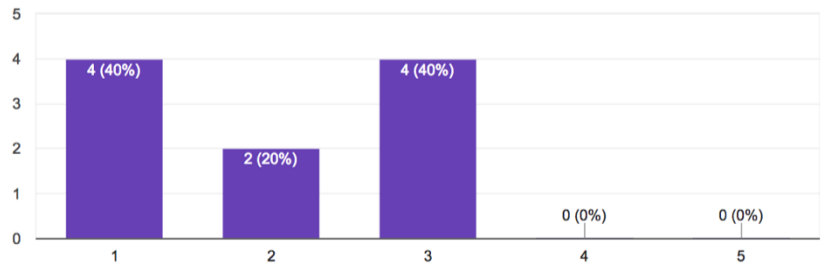
How did the participant use the lid?

10 responses



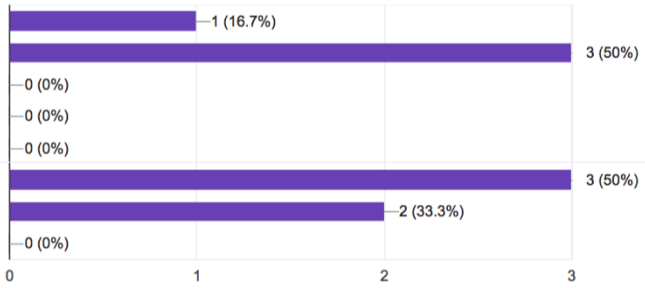
How easily did the participant Make use of the lid?

10 responses



Usability test

6 responses



Notes

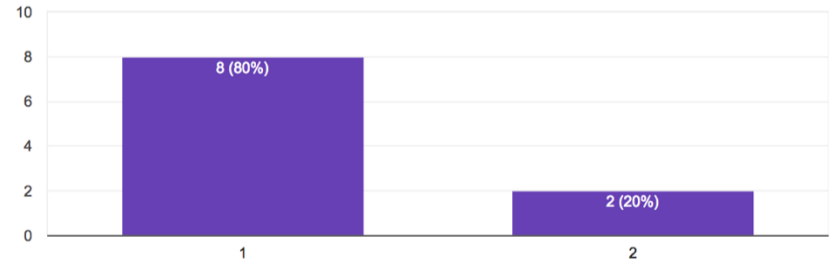
10 responses

Participant used the lid internally but not in the intended way, participant threaded the lid inside the package, not in a way prescribed to compress the contents.
Participant used the lid externally to the maximum flat top level.
Uses the lid externally, does not assume the internal option.
Participant struggled with flaps on side of lid
Assumed the lid went externally because of flaps
Participant was confused by flaps on the lid unsure how it folded.
confused as to what the flaps on the lid are for
used the lid correctly but externally
had trouble with flaps, but used lid to compact contents.
Slightly confused as to the flaps on the lid of the box

Observation of Participant using adhesive tape

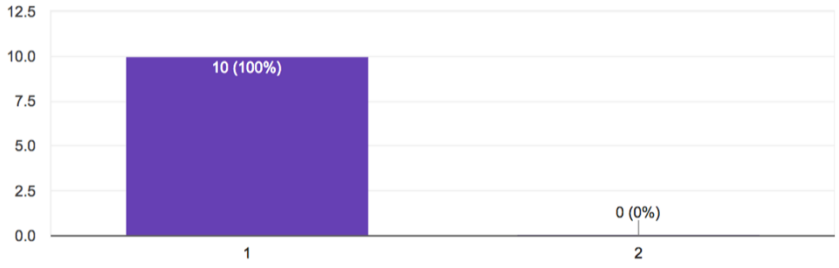
Did the Participant find the adhesive strip?

10 responses



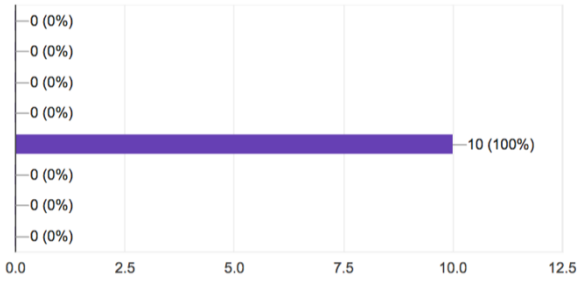
Did the Participant know what to do with the adhesive strip?

10 responses



Usability test

10 responses



Notes

Notes

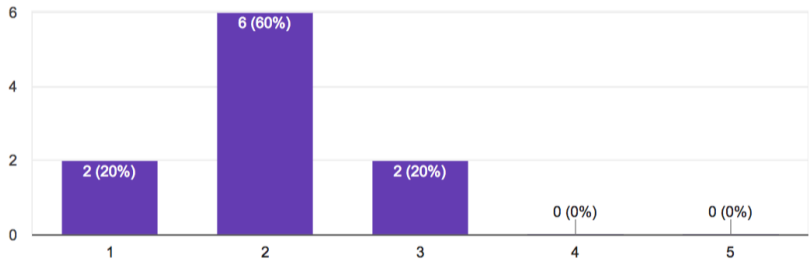
9 responses

Participant had to be shown the adhesive strip and was surprised when shown
Understands that the tape is double sided sticky tape and knows how to use correctly.
Seems pleased with adhesive tape, but struggled to find it.
Participant found the adhesive strip convenient.
found and knew how to use the adhesive strip
knew exactly how to use adhesive strip and found it easily
knows exactly how to use adhesive strip
Knew exactly how to use adhesive strip. used it to stick internally.
Knew exactly what the adhesive strip was for.

Observation of participant using handle.

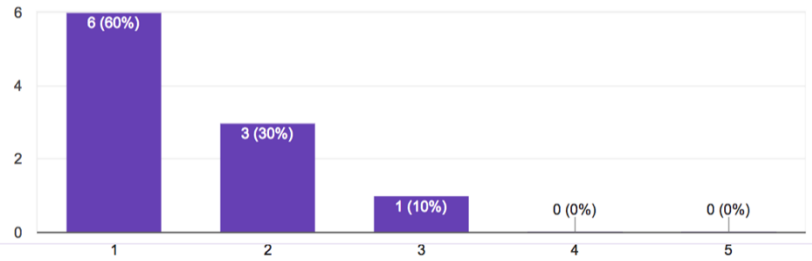
How did the participant seem with using the handle?

10 responses



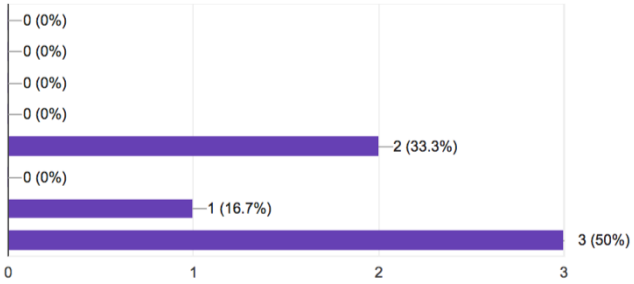
How did the participant find the handles strength?

10 responses



Usability test

6 responses



Notes

10 responses

Participant easily found and knew what the handle was for. Tested for strength and found the grip pleasing
Participant found the handle not so ergonomic and quite rough
Participant seemed concerned with whether the handle is strong enough.
Participant used handle easily, knew instantly it was a handle.
Participant was indifferent about the handle, jsust expected how it would work.
Participant found handle sturdy and visibly tested it for strength.
suggested the handle could have better ergonomic feeling
questions the handles strength
found the handle could have a smoother feel.
Found the handle ergonomic and easy to hold.

What was the participants overall feedback of the box construction.

Notes

10 responses

Participant suggested flaps on the lid were un needed and confusing.
Participant felt the box was overall well designed. Did make a comment on unnecessary flaps
Participant was pleased with the overall design of the box.
Participant suggests removal of flaps on the lid.
Participant suggests the overall box was a quick and convenient design.
Participant found box easy to use, strong and designed well.
overall pleased with box design
overall seems to think the box design was a good idea
Overall found the box a sound design, although suggested the cardboard was too thick
Found the overall design of the box pleasing and comment that it met its purpose.

Section 1 of 9

Usability test CariCarton Version 7.4

Does the demonstration package contain instructions or not?

Construction of the box *

- Arrow Instructions
- No Arrow instructions

Section 2 of 9

No Arrow Instructions

Time taken to assemble box from flat

Time Taken to complete task *

Short answer text

Did the participant construct the box easily?

- Yes
- No

Notes

Long answer text

Section 3 of 9

Arrow Instructions

Time taken to assemble box from flat

Time Taken to complete task

Short answer text

Did the participant construct the box easily?

- ○ Yes
- ○ No

Notes

Long answer text

Section 4 of 9

Load the package

This test is about how easily the package is loaded with items

How easily did the participant load the package

	1	2	3	4	5	
Easily	○	○	○	○	○	Hard

Notes

Long answer text

Section 5 of 9

Does the package have instructions to find the double sided tape?

Description (optional)

Question

- ○ Instructions
- ○ No instructions

Section 6 of 9

Sealing the package with instructions

This round of usability testing is about how easily a participant found how to seal the package.

How easy was it to find the sealing tape of the package.

	1	2	3	4	5	
Easy	○	○	○	○	○	Hard

How easy was it for the participant to use double sided tape on the package?

	1	2	3	4	5	
Easy	○	○	○	○	○	Hard

notes

Long answer text

Section 7 of 9

Sealing the package without instructions

This round of usability testing is about how easily a participant found how to seal the package.

How easy was it to find the sealing tape of the package.

	1	2	3	4	5	
Easy	○	○	○	○	○	Hard

How easy was it for the participant to use double sided tape on the package?

	1	2	3	4	5	
Easy	○	○	○	○	○	Hard

notes

Long answer text

Section 8 of 9

Look of instructions

Description (optional)

Participants were show 3 sets of instructions and asked what size typeface they preffered.

- 12pt
- 14pt
- 16pt
- 18pt

Participants were asked if they liked the look of instruction design.

- Yes
- No

What do you like or dislike about the instructions?

Long answer text

Section 9 of 9

Participants were asked their thoughts on how the caricarton looked.

Description (optional)

What do you like about this design?

Long answer text

What don't you like about this design

Long answer text

Can you think of a use for the design?

Long answer text

How could the design be improved?

Long answer text

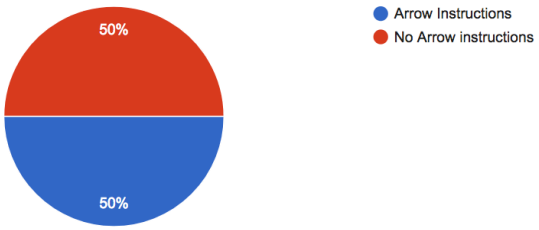
10 responses

SUMMARY INDIVIDUAL

Accepting responses

Construction of the box

10 responses



No Arrow Instructions

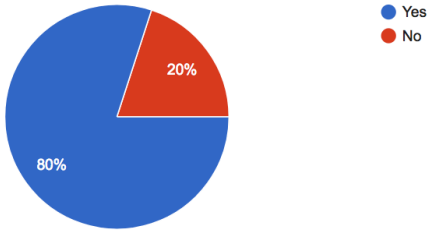
Time Taken to complete task

5 responses

3.5s
3.6s
4.8 seconds
2.9 seconds
5.2seconds

Did the participant construct the box easily?

5 responses



Notes

5 responses

Participant tried pulling the middle of the box instead of pushing the sides.
Participant found how the box went up quite easily.
Participant tried to open with the box lid.
Participant tried pulling in the middle but managed to construct the box easily.
Participant opened using the middle of the box but seemed to erect easily.

Arrow Instructions

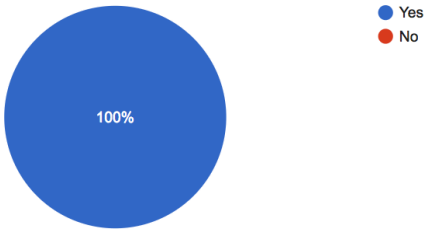
Time Taken to complete task

5 responses

1.4s
2 seconds
1.8 seconds
2.4
3.5 seconds

Did the participant construct the box easily?

5 responses



Notes

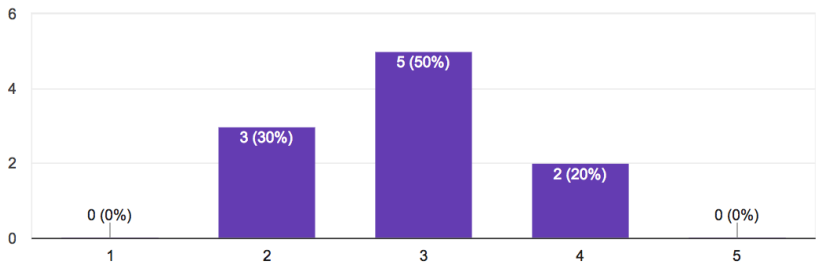
5 responses

Participant saw instructions easily and used to construct the package efficiently, Participant commented that construction of the package was easy.
Participant followed arrow instructions and constructed the package easily.
Participant showed signs of suprise how quickly the package was constructed
Found how to make the box really easy and liked the way it 'popped up'
Once participant saw the instructions they approached constructing the box correctly.

Load the package

How easily did the participant load the package

10 responses



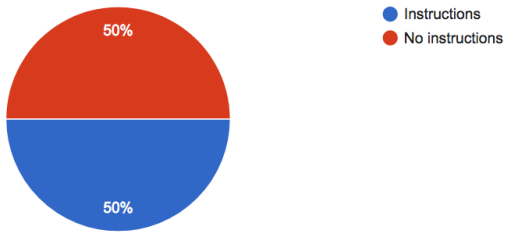
Notes

10 responses

Participant found it a little difficult to load the package, because of the lid flapping around and the high sides of the walls.
The high sides got in the way and made loading the box a squeeze.
The lid and the packaging wall seemed to get in the way to complete this task easily.
Participant found the high walls got in the way.
The high sides made the package hard to construct.
Participant found easy to add all required items to the box.
Participant seemed to load all suggested packages correctly.
Participant struggled to get all items int package easily.
Participant managed to load the package with all required items.
Participant struggled a little to get all contents inside, because of the high sides.

Does the package have instructions to find the double sided tape?

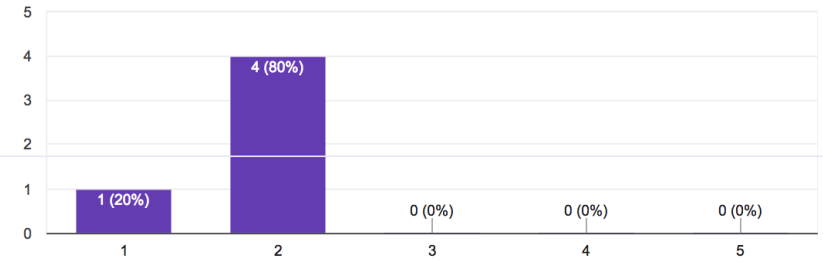
10 responses



Sealing the package with instructions

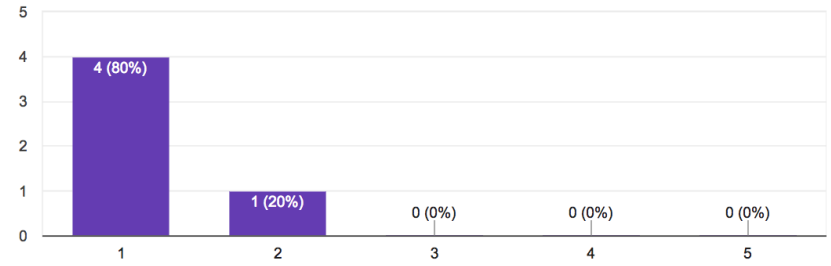
How easy was it to find the sealing tape of the package.

5 responses



How easy was it for the participant to use double sided tape on the package?

5 responses



notes

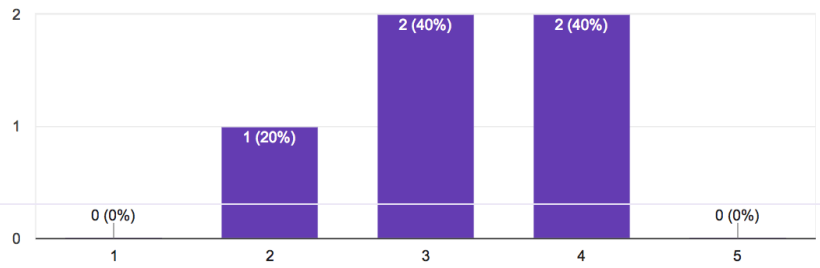
5 responses

Participant found double sided tape easily, and instantly knew what to do with the tape when found.
Participant found the double sided tape and knew instantly how to use this.
Participant found the double sided tape after reading instructions and knew how to use instantly.
Participant found the tape with aid of instructions easy, and also knew how to use the sticky tape instantly
Participant found the tape easily and knew how to use the tape

Sealing the package without instructions

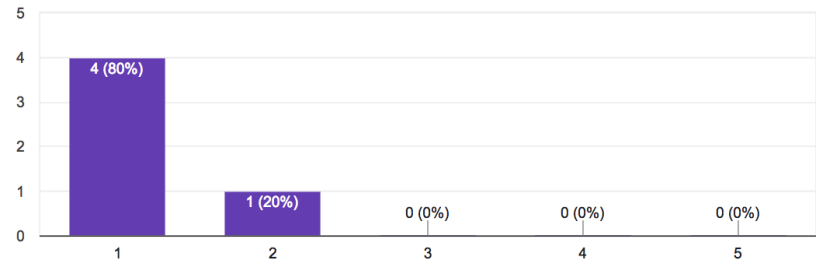
How easy was it to find the sealing tape of the package.

5 responses



How easy was it for the participant to use double sided tape on the package?

5 responses



notes

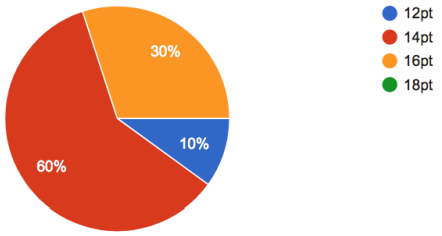
5 responses

Participant struggled to locate the tape on the inside of the box lid, but when found, knew exactly how to use it.
Participant took some time to find the tape, but knew exactly how to use once found.
Participant took a while to find the tape but used easily when found.
Participant struggled to find the tape, but when did knew how to use easily.
Participant found instructions without aid and knew exactly how to use the tape.

Look of instructions

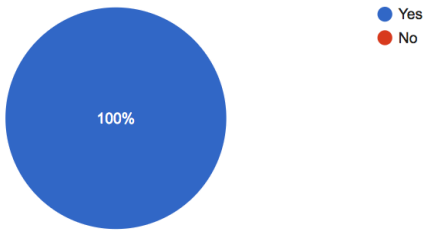
Participants were show 3 sets of instructions and asked what size typeface they preffered.

10 responses



Participants were asked if they liked the look of instruction design.

10 responses



What do you like or dislike about the instructions?

10 responses

Simple instructive colours and design style, very easy to understand.
Easy to follow design with nice colour scheme
Nice colour scheme and easy to understand.
Nice colours and easy to understand.
Easy to understand, looks like the box.
Easy to understand, relates to the package.
Easy to follow and good colour scheme
Looks nice and clean, easy to follow.
Nice design easy to understand
Easy to understand and looks like the box.

Participants were asked their thoughts on how the caricarton looked.

What do you like about this design?

10 responses

Construction is quick and easy.
The construction of the package is very easy to work and is very simple to use.
Easy construction, nice feeling handle and strong
Strong and nice central handle.
Simple design that erects easily.
Strudy and simple to construct, doesn't take up much room when flat.
assembles easily
looks recyclable and strong.
Looks recyclable and holds alot.
Strong and assembles really easily.

What don't you like about this design

10 responses

The lid is a bit cumbersome and doesn't appear strong enough.
The high sides made the package hard to load.
Hard to fit things into the box
The lid is a bit inconvenient.
Hard to find things like the tape on the underside of the lid.
The lid gets in the way.
lid gets in the way a little bit.
A little confusing on how to use properly
The lid isn't seamless and you can see inside the package
the lid is a little flimsy

Can you think of a use for the design?

10 responses

Online shopping (2)
Perhaps for shopping.
Perhaps shopping, or use in a warehouse.
Shopping or collecting from store.
Click and colect online shopping.
Send things bought online.
Perhaps as a shopping cart.
a shopping basket.
its like a shopping basket.

How could the design be improved?

10 responses

The lid gets in the way, is the lid necessary?
Stronger lid design, perhaps some colour on the packaging.
Make easier to fill the package. stronger cardboard.
The lid needs to be improved and perhaps a bigger opening to load the box.
Is the lid needed? maybe a separate lid could be better.
Instructions to find the sealing tape.
Stronger cardboard
Maybe the handle needs to be stronger or better cardboard.
Flat lid design, and stronger cardboard.
Perhaps a separate lid would be a better option

Table of figures