

Original Research

Upcycled Products in Indonesia: Factors Influencing Willingness to Pay

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Abstract—Research on clothes waste reduction, especially upcycling suggests that solutions aimed at reducing clothing waste are effective. Based on this ground, further research on upcycling is carried out. As Indonesian millennials can be categorized as ecologically conscious consumers nowadays, it is possible that upcycling can grow more rapidly and become the solution to the world-waste problem. To make that happen, further research needs to be done to increase public and fashion business owners' awareness. This research examines the willingness to pay for upcycled products in Indonesia. The method of this research is a mixed method - qualitative and quantitative method, which was conducted through online surveys of 30 participants and 5 people in a forum group discussion to gain deeper information. Data were analyzed using van Westendorp's analysis of price sensitivity. The finding of this research is that the consumers are willing to pay 3-4 times more expensive than the original garment price as the ideal price of upcycled products, the factors influencing it are meaningfulness, familiarity with sustainable products, and quality improvement of the products.

Keywords: *upcycle, willingness to pay, fashion, sustainable fashion*

Abstrak—Penelitian tentang pengurangan limbah pakaian, khususnya *upcycling*, menunjukkan bahwa solusi yang ditujukan untuk mengurangi limbah pakaian cukup efektif. Berdasarkan hal tersebut, penelitian tentang upcycling banyak dilakukan. Dengan melihat peluang bahwa milenial Indonesia saat ini dapat dikategorikan sebagai konsumen yang sadar lingkungan, maka tidak menutup kemungkinan bahwa upcycling dapat berkembang lebih pesat dari sekarang untuk dapat menjadi solusi dari permasalahan sampah dunia. Untuk mewujudkannya, perlu dilakukan penelitian lebih lanjut untuk meningkatkan kesadaran masyarakat dan pemilik bisnis *fashion*. Penelitian ini mengkaji tentang kesediaan membayar (WTP) produk hasil *upcycling* di Indonesia. Metode penelitian ini adalah metode kualitatif dan kuantitatif, menggunakan kuesioner yang diberikan kepada 30 orang, dan FGD meliputi 5 orang, dengan analisis sensitivitas harga milik van Westendorp. Temuan dari penelitian ini adalah konsumen bersedia membayar 3-4 kali lebih mahal dari harga garmen asli sebagai harga ideal produk upcycled, dan faktor-faktor yang memengaruhinya adalah kebermaknaan, keakraban dengan produk yang berkelanjutan, dan peningkatan kualitas produk.

Kata kunci: *upcycle, fesyen, fesyen berkelanjutan, kesediaan membayar*

INTRODUCTION

Humans have three primary needs, one of which is clothing. Clothing is a human need that will always increase in number with the increase in population and human desires which also results in bigger waste problems (Cai & Choi, 2020). This is supported by a 'fast-fashion' culture that is increasing rapidly, where garment collections of world-renowned designers can already be produced in developing countries such as Vietnam, Cambodia, and Indonesia and can be purchased at very low prices, making it possible for consumers to buy more clothes in a shorter time (Chang, Rynhart, & Huynh, 2016). This phenomenon also occurs in Indonesia. When clothes are thought to be out of date and boring, people tend to discard or throw away the clothes and buy new ones (Brydges, 2021). Because of the consumptive lifestyle of the people and the lack of knowledge about the use of old clothes, people tend to discard clothes instead of reusing it. The clothes they throw away is not actually broken, they still have the potential to be reprocessed and be used again (Kawamura, 2005). Several methods of repurposing used clothing, such as recycling (reprocessing without adding value) and upcycling (reprocessing by adding value) have begun to be applied in several community groups (Kay, 1994). Unfortunately, recycling also has drawbacks, it is where some process in recycling produces carbon dioxide (CO₂) which is harmful to the environment. Based on the two processing methods, Upcycling is a better way to be applied to reduce the pile of clothes that are piling up.

Over the last decade, more fashion brands have turned to upcycling concept, even, this technique has been worked into one of sustainability efforts (Aus et al, 2021). The upcycle technique can be a combination of two or more techniques and clothes. It involved old, worn out fabric or other materials to be transformed to new product (Zhi, 2022), and people can also change the shape of the clothes, change the function, or just simply add materials to the clothes so that the selling value of the clothes can increase, which make the user is interested in wearing them. Therefore, it is very important to raise awareness, interest, and knowledge of the public as well as businessmen towards used clothing products. This is a good opportunity since what others see as waste or rubbish, could be upcycled successfully with added value when the treatment is properly done (Kamble & Behera, 2021). Clothing that is redesigned will reduce the exploitation of natural resources by extending the life of a product (Armstrong et al., 2015). That way, the community can contribute to protecting the environment from pollution and waste.

Indonesian people, especially Indonesian millennials, can be categorized as people who are aware of the environment (ECC or Ecologically Conscious Consumer). This was stated by Parung (2019). According to Parung (2019), Indonesian millennials have begun to realize the importance of reducing clothing waste by modifying their used goods. Unfortunately, much still needs to be done to make the public aware that excessive buying of new clothes can have dire consequences for the environment (Gonzalez, 2015). Specifically for Indonesia, there has not been any research identifying the upcycle market in Indonesia, which makes it more important for us to dig deeper into upcycling. To raise public awareness, special education about upcycling is needed as well as an understanding of the added value of these products, so that upcycling products can be seen as prestigious products and not inferior to 'fast-fashion' products on the market. In addition to training and education for the community, it is necessary to test the upcycling product market as a provision for businessmen in the upcycling field. To make upcycling businesses spread all over the country, we need systemic efforts, one of which is through research to find out about purchase intentions and consumers' willingness to pay for upcycling products. A similar study has been conducted by Hamzaoui Essoussi & Linton (2010), which in their study, they address how the consumers are willing to pay for recycled products. However, recycled products are different with the upcycled ones, because in recycling, we break down the old materials and turn them into new raw materials, hence, we cannot compare them with the old ones.

The result of this study will be beneficial for emerging upcycling business to understand how the market value upcycled products and how much they are willing to pay the products. Such knowledge and information will be useful to make the upcycling business sustainable.

Upcycled Products

Upcycling or also known as product repurposing is a way to reuse a product to create a new product, by making the product value higher than before (Myers, 2014). Since 2012, upcycled products have been in the spotlight of the public, which is an influence of the rise in social responsibility in society (Lee, Young & Halter, 2012). Several previous studies have shown that there are still many clothes that have been thrown away and are still fit for use. This intrigues creative workers who are sensitive and have lots of ideas to reuse the clothes. They pour their creative ideas and give a new touch to the clothes, so that they can be re-sold in the market. Thus, this upcycling process is often considered 'expensive and meaningful'. Aus et al., (2021) stated that upcycling process can be done with very low cost, however, it creates good opportunity to find the highest value and meaning of old garment. This value and meaning of a product can shape consumers' perceptions through meaningful and positive experiences (Desmet & Hekkert, 2007), and consumers tend to choose products that are meaningful for them. In this study, the meaningfulness is considered subjective and based on the consumers This becomes a reference for submitting hypotheses as following:

'Consumers perception on the meaningfulness of upcycled clothes has positive correlation with WTP' (H4).

The benefits of upcycling are not only felt materially and physically, but also psychologically. Consumers can feel the attachment and emotional experience when seeing, feeling, and wearing these clothes. Mostly, upcycled clothes are processed manually, with techniques that use hands and require certain skills. Behind an outfit, a unique story can be created, because each maker has a different response to the clothes. According to Yu and Lee (2019), upcycling can give a new life to a product through unique and fresh ideas which make these products are favourable (Park & Lin, 2018). This becomes a reference for submitting hypotheses as following:

Consumers perception on the uniqueness of 'Upcycled clothes' has positive correlation with WTP' (H1)

According to Bramston and Maycroft (2014), designers must have the ability and skills to think creatively and appreciate the clothing materials, so that the resulting product can be maximized. This is also stated by (Singh, Sung, Cooper, West & Mont, 2019) that upcycling process can increase the quality and lifetime of products. According to Verma and Gupta (2004), increased quality tends to be associated with increased price as well. Thus, this is a reference for submitting hypothesis:

Consumers perception on improved quality of 'Upcycled clothes' has positive correlation with WTP.'(H5)

Willingness to Pay for Environmentally Friendly Made Clothes

Generally, according to Tey, Brindal, and Dibba (2018), there is a big desire among consumers for a sustainable product, especially in fashion industry, even when the price is more expensive than the usual clothes.

Willingness to Pay, or usually abbreviated as WTP, is the highest or maximum price a consumer is willing to pay to get a product. This can be a measure of how expensive the consumers/prospective consumers value these goods and services. (Zhao & Kling, 2005). Through willingness to pay, consumers can also reflect on the value of products (including physical goods and services) and the sacrifices that must be made to get these products (Simonson & Drolet, 2003). Several research on Willingness to Pay for environmentally friendly clothing products have been carried out. One of them is by Goswami (2008) who examined consumers' willingness to pay for clothes with eco-labelled cotton in India. The result of this research was consumers are interested in buying clothes with eco-labelled cotton at a higher price. Some previous research on willingness to pay also gave interesting results. Laroche, Bargerion, and Barbaro-Forleo (2001) found that gender has an important role in willingness to pay. Women are more likely to be willing to pay more for environmentally friendly products than men. Another research involving willingness to pay is the research by Konuk (2019), in food sectors, one of the things that positively impact WTP is the environmental concern. And this becomes a reference for submitting hypotheses as following:

Buyers' Awareness of Ecological Issue (Environmental Awareness) has positive correlation with WTP (H2).

Regarding the buying behaviour, Shiasi Arani & Shafiizadeh (2019) stated that there is a positive effect between familiarity and buying behaviour among the consumers. Other research has also found that consumers' perceptions of sustainable products were positively related to the familiarity with the sustainable products, which possibly in fashion sector, the products' familiarity also plays an important role (H3).

Buyers' Familiarity with Sustainable Product has positive correlation with WTP (H3)

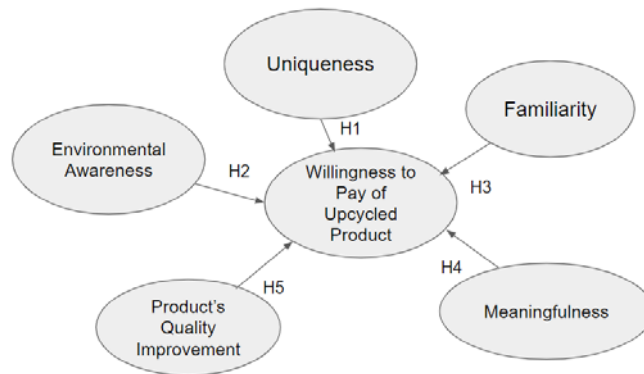


Figure 1. Conceptual framework.

METHOD

This research is a mixed method research, which the method is a combination of qualitative and quantitative methods. The method used is **embedded design** in which the quantitative data is supported by the qualitative data. Quantitative method used is through online survey, and the data is deepened through a focus group discussion. Mixed method is used for this study as this study focuses on two main things: willingness to pay of 3 case studies of upcycled products (to determine the price) and the factors that influencing the willingness to pay.

Data collection was carried out in January 2022 in Surabaya, East Java, using the online direct survey method which was directly carried out on 30 potential consumers. According to Arikunto (2010), study should use at least 100 respondents for proper statistical results. However, since this study's respondent numbers are limited, this study is considered as initial/preliminary study.

The sampling method used in this research is purposive sampling, where the sample is selected based on the needs of this study, namely prospective consumers of upcycling products who are at least 17 years old and in millennials generation age group.

The online surveys shared consisted of 3 parts: (a) Participant demographic (Age group, Gender, Income), (b) Willingness to Pay (WTP) for used clothing products which include prices that are considered too cheap, too expensive, and cheap tend to be ideal. (as stated by Van Westendorp, 1976) (Upcycled clothes WTP), (c) Factors influencing the willingness to pay, which each variable is seen on Table 1.

Table 1

Question Items According to Factors

No	Factors	Questionnaire Items
1	Uniqueness	I am willing to pay more for this product because it is one of a kind.
2	Environmental Awareness	I am willing to pay more for this product because it helps reducing waste I am willing to pay more for this product because the production process is environmentally friendly.
3	Familiarity	I am willing to pay more for this product because I have bought similar product before.
4	Meaningfulness	I am willing to pay more for this product because it has distinctive story behind every product.
5	Quality Improvement	I am willing to pay more for this product because the quality has improved after the upcycling process. I am willing to pay more for this product because it has been washed clean and redesigned from the original product.

Regarding WTP, there are several ways/methods to determine the amount of Willingness to Pay (WTP) according to Hanley and Spash (1993).

Bidding Method. The bidding method is done by asking participants directly about their willingness to pay a certain amount for a product. The amount of the value of the money is increased or decreased to a mutually agreed level.

Open - Ended Method. This method is a method where participants directly answer what the maximum price they want to pay to get certain products/services. The advantage of this method is that there is no initial bias that may occur as in the bidding method. However, for this method, the data can vary greatly.

Payment Card Method. In this method, participants are offered cards consisting of various values of ability to pay, where participants are allowed to choose the value according to their wishes.

Close-Ended Referendum Method. In this method, participants are offered a certain amount of money and asked whether the specified amount is willing to pay for certain products/services.

Another way to get consumers' opinion of price is through Price Sensitivity Meter by van Westendorp (1976), where it helps determine the range of prices for a product easily. The participants are asked using the open-ended method regarding the maximum, minimum, and ideal price of the product.

To determine WTP, there are 3 important indicators according to Miller, et. al (2010), namely: (1) The behavior of consumers to be willing to pay more in buying products/services that have been determined. This relates to the intention and desire to buy a product/service. (Purchase intentions); (2) Choose the product offered even though there are other products that are cheaper; (3) Customer loyalty and consistency.

The WTP method used in this study is the direct measurement method from Van Westendorp (1976) using a price sensitivity meter. The consideration of using Van Westendorp method is that this method is practical and easily done, considering the time limits and how the survey was conducted (online surveys) and it will result the product's price range that will be beneficial for the study. In this calculation, participants will be asked questions about prices that are too cheap, cheap - ideal, and too expensive to determine the ideal price using a price sensitivity meter by Van Westendorp.

The data collection method used is an online direct survey and followed by a group discussion forum conducted with 5 people from 30 direct survey participants. Five people were chosen from the participants to gain deeper understanding the reason behind the willingness to pay and the factors influencing. Data were analyzed using PSM (Price Sensitivity Meter) and SPSS.

RESULT







Characteristics of Respondents

Most of the respondents in this study were women (86.7%), and were in the age group 17-24 years (73.3%). The age group of 17-24 years is the main target in this study because they have a higher desire to shop than other age groups for fashion products. sitting in college and most do not have their own income. For work, the respondents in this study were mostly students (70%), followed by private employees (20%), and self-employed. For monthly income, the characteristics of the respondents in this study tend to have an income of 2,000,000 rupiah – 5,000,000 rupiah per month, it can be assumed that this is pocket money because they are still studying, followed by 5,000,000 rupiah – 10,000,000 rupiah per month, and the rest is 10,000,000 and above.

Upcycled Product Results

To find the willingness to pay, we used three (3) upcycled products. Upcycled products used for this research are 3 garments consist of Halter Knit Top, Honeycomb Outer, and Floral Outer, as shown in Table 2.

Table 2
Upcycled Garment Used in the Research

No	Garment (before upcycling)	Upcycling Products	Product Name
I			Halter Knit Top
II			Honeycomb Outer
III			Floral Outer

Analysis of Willingness to Pay for Upcycling Products

The questionnaire results showed that 18 people (60%) of the respondents are willing to pay more for products produced by generally environmentally friendly processes. Sixty percent of these respondents answered Agree on a Likert Scale (1 – 3, with 1 = Disagree, 2 = Neutral, and 3 = Agree). This proves that in general, more than half of the respondents already have the will to choose products that are more environmentally friendly even though the price is higher. WTP analysis was conducted to determine the value of consumers' willingness to pay for 4 upcycling clothing products. The author uses a price sensitivity meter by Van Westendorp to determine the willingness of consumers to pay through a survey.

Product I

Product I is a Knit Halter Tank Top. This product is made from 3 used clothes, each of which costs Rp. 25,000.00. Judging from the price sensitivity graph of the respondents' survey results in Figure 1 the price range obtained for the ideal price is Rp. 400.000,00 - Rp. 500,000.00.

The following is a breakdown of the costs for the manufacture of product I:

Original product price:	
25,000 x 3 products	= 75,000
Sewing Fee :	= 75.000
Total	= 150,000

The result of the price according to sensitivity meter analysis for product I is 2 to 3 times the price of the original product including the price of the workmanship. However, during group discussion, respondents also thought that this price could be increased, with several provisions, such as: the branding on the upcycle product, also how the upcycling brands educating consumers about the product manufacturing process.

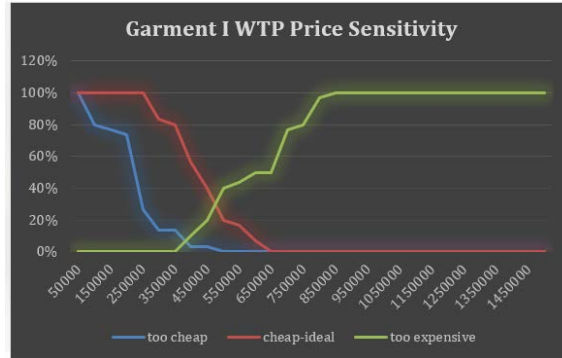


Figure 2. Garment I price sensitivity graph.

Product II

The second product is an Asymmetrical Honeycomb Outer. This product is a modification of 1 outfit from deadstock which is worth Rp. 60,000.00. Judging from the price sensitivity graph of the respondents' survey results in Figure 1(top right), the price range obtained for the ideal price is Rp. 550,000.00 - Rp. 700.000,00, which is 9 to 11 times the price of the original product without modification (Rp 60.000,00). However, we need to consider the manufacturing cost as well. The breakdown of manufacture costs of product II:

Original product price	= 60,000
Sewing Fee	= 60,000
Material cost	= 55,000
Total	= 175,000

The ideal price from the results of price sensitivity meter analysis (PSM) for product II is 3-4 times the price of the original product including the material and workmanship.

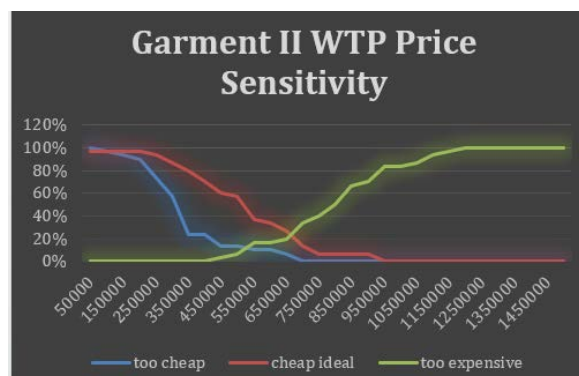


Figure 3. Garment II price sensitivity graph.

Product III

Product III is an Asymmetrical Flower Outer. This product is a modification of 1 garment from the deadstock product which is worth Rp. 60,000.00. Figure 1 provides an explanation of the number of respondents in percent and price sensitivity. Judging from the price sensitivity graph of the respondents' survey results in Figure 4.7, the price range obtained for the ideal price is Rp. 450,000.00 - Rp. 650,000.00, which is 7-10 times

the price of the unmodified original product, which is Rp. 60,000. The following is a breakdown of costs for the manufacture of product II:

Original product price	= 60,000
Sewing Fee	= 60,000
Material cost	= 40,000
Total	= 160,000

Thus, the ideal price from the results of the price sensitivity meter analysis for Product III is 2-4 times the price of the original product including materials and processing costs.

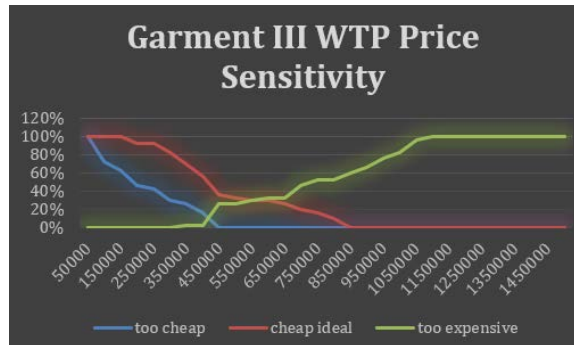


Figure 4. Garment III price sensitivity graph.

Hypothesis Testing Results and Discussions

Because the characteristics of the respondents for this study have almost the same age and gender groups, the variables of age and gender are excluded. The significance of the affecting factors can be found by analyzing sig. value. The assessment of the variables that affect the willingness to pay can be seen in Table 2.

Table 3

Assessment of Variables Affecting Willingness to Pay

No	Factors	Items	Sig Value	Conclusion
1	Uniqueness	I am willing to pay more for this product because it is one of a kind.	0.545	Not significant
2	Environmental Awareness	I am willing to pay more for this product because it helps reducing waste	0.404	Not significant
		I am willing to pay more for this product because the production process is environmentally friendly.	0.000	Significant
3	Familiarity	I am willing to pay more for this product because I have bought similar product before.	0.033	Significant
4	Meaningfulness	I am willing to pay more for this product because it has distinctive story behind every product.	0.000	Significant
5	Quality Improvement	I am willing to pay more for this product because the quality has improved after the upcycling process.	0.000	Significant
		I am willing to pay more for this product because it has been washed clean and redesigned from the original product.	0.009	Significant

Table 4
Focus Group Discussion Results

Focus Gorup Discussions Result: Factors Affecting Willingness to Pay					
Part	Uniqueness	Environmental Awareness	Familiarity with Sustainable Product	Meaningfulness	Quality Improvement
1	Uniqueness plays an important role as consumers want to be unique wearing the clothes. Upcycle clothes are not mass produced which make them limited.	People might be aware of environmental issue, but they might not adapt it to their daily life. Sometimes it also depends on the educational background.	People tend to buy things they are familiar with. If the products are more expensive but they know that the product has great quality, they might buy them	Meaningfulness can be a good point in purchasing product, even paying more for it since we do not want to regret buying things.	Quality and Price is related. If you want good quality product, you need to pay more.
2	Some consumers just want clothes that are meaningful to them. For some people, uniqueness does not matter.	As a person, I am very ethical and ecologically conscious. I do not use plastic bag, and I always bring my own water bottle to avoid plastic waste. However, in fashion consumption, it is hard to connect it with environmental awareness.	I tend to stick to routines; I shop in the brands I believe in. If I am comfortable with the product, I would be willing to buy.	(agree with Participant 1)	I like high quality product. Thus, it is not a problem for me to pay more.
3	If I want unique clothes, I am willing to pay more.	I understand about the need to go environmentally conscious, but I guess it depends on how much we want to pay for environmentally product.	It the brand is well-known, I would trust the brand, and the product as well. I can pay more for it	In the case of upcycled product, if the making process is communicated well to the consumers, I am sure that many people will understand why the price is more expensive.	The upcycled product I see in the picture is way better than the old one. Yes, it influences my willingness to pay.
4	The uniqueness of upcycled clothing is not why I am willing to pay more. People have their preferences of uniqueness in fashion. I love how the quality is actually improved when it is fixed.	If I like the style and quality, I am okay paying more for it. If it turns out to be environmentally friendly, I would be more than happy buying it.	I can pay for product more if I trust the brand and product. I guess branding plays an important role here.	I am willing to pay more for products I find meaningful. The purpose of shopping is to make us happy and content after all.	As long as it sparks joy, I am okay to pay more for it. However, even though the quality is improved, if I do not like the style of it, I don't think I would be willing to pay.
5	For me it is the other way around. I buy secondhand clothing because it is cheap. If it is more expensive, I don't think I am willing to pay more even though it is unique.	Price is the key. I would buy it as long as it suits my money.	I dont think it is affecting any of my fashion consumption.	I agree that meaningfulness can affect how people want to pay for products because buying products are personal.	If the quality is good and the price is low, I am okay buying it. But to pay much more, I don't think so.

Based on Table 2 and Table 3, the things that affect the willingness to pay for upcycling products outside of the demographics of the respondents are: Familiarity with Sustainable Product, Meaningfulness, Quality Improvement.

Familiarity with Sustainable Product

H3: Buyers' Familiarity with Sustainable Product has positive correlation with WTP

Familiarity here is the familiarity of potential consumers with existing sustainable products. The result indicates that even though environmental awareness does not play role in willingness to pay, the consumers still think that branding is important. For example, the famous sustainable fashion brand is much more trustworthy than the unknown/new sustainable fashion brand, not because of its sustainable application, but because of its big and famous name among the consumers. From the FGD results, it can be informed that consumers tend to stick to brand and product they are familiar with.

Meaningfulness

H4: Upcycled clothes' meaningfulness has positive correlation with WTP

Potential consumers intend to pay more for upcycling products because of its meaning, the upcycling product is custom made by the maker so that it is more meaningful. FGD results indicates that people tend to be willing to pay more for things that they feel meaningful to them. Also, meaningfulness can be supported by how the brands communicate with the potential consumers – for example in communicating or showing how the products are made.

Quality Improvement

H5: Upcycled clothes' improved quality has positive correlation with WTP.

Used clothes that have been upcycled will experience a significant increase in quality so that consumers are willing to pay more. From the FGD, consumers are also impressed by the way the clothes improved. They would be willing to pay more if they understand the process of upcycling itself.

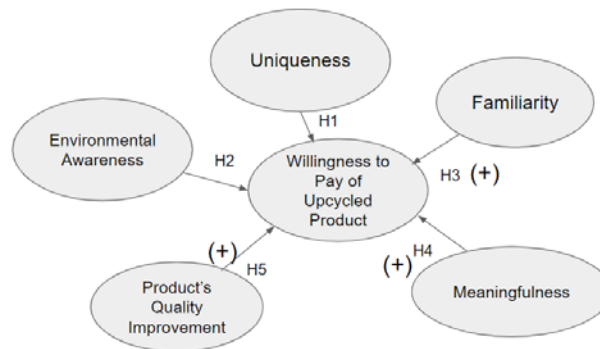


Figure 5. Diagram of factors influencing willingness to pay of upcycled product.

From the Figure 5, the uniqueness of clothing and awareness of consumers about the environment has no significant effect on willingness to pay, so further studies are needed to be done regarding these effects – on why it has no significant effect. As shown in Table 2, the factors are familiarity, meaningfulness, and the quality of the product.

However, despite these variables, based on Forum Groupd Discussions (FGD) results, there are other factors that likely influence the consumers' willingness to pay such as the upcycled product's branding and consumers' education. This research has not covered these aspects specifically since mainly, the participants had the same educational background. This is the limitation of the study, and it could be studied further in future research.

CONCLUSION

Based on the results of the research, several conclusions can be drawn as follows. Used clothes that are reproduced by upcycling methods, their selling price can increase from 2-4 times the price of the original product including the price of manufacturing.

There are three important factors that influence consumers to be willing to pay for upcycled clothing: (a) meaning/meaningfulness of upcycling products, (b) the familiarity with sustainable products (existing ones), and (c) The significant increase in product quality from used clothes to the resulting upcycling products.

The results of this study can be used in business and creative industries, especially in fashion industries, to understand the millennials consumers' opinions about upcycled products and how they would be willing to pay for the product. The results have indicated that the millennials are willing to pay for upcycled products, however, the awareness of consumers towards upcycled process needs to be improved. Hence, the fashion upcycled business can create branding and marketing strategy to overcome the problem occurred and start to educate the consumers about upcycled clothing.

However, there is a limitation of this study, which is the participant's numbers and demographic characteristics. Because most of the participants used in this study are mainly in the same age group and have the same gender, hopefully in the future research the sample of the participants can be more varied to find out whether age and gender influence the participant's willingness to pay of upcycled fashion products.

Future research can include the branding and marketing factors of upcycled products that based on the FGD done in this research, it might play an important role of consumers' willingness to pay of sustainable products, especially the upcycled ones.

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