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## **Why Consumers Pay Voluntarily: Evidence from Online Music**

by

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# Why Consumers Pay Voluntarily: Evidence from Online Music<sup>1</sup>

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JEL classifications: C83, D03, D82, M21, L82, L86

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## Abstract:

Customers at the online music label Magnatune can pay what they want for albums, as long as the payment is within a given price range (\$5-\$18). Magnatune recommends to pay \$8, and on average customers paid \$8.20 (Regner and Barria, 2009).

We ran an online survey and collected responses from 227 frequent Magnatune customers to gain insights about the underlying motivations to pay more than necessary. We control for individual response- and sample selection-bias, and find that reciprocity and guilt appear to be the major drivers for generous voluntary payments. Being inclined to follow social norms is a positive determinant for payments around the recommended price.

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## 1. Introduction

By now there is substantial evidence, mostly from laboratory experiments, on other-regarding behaviour, which is typically explained by individuals having social preferences.<sup>3</sup> Our paper checks the external validity of lab results and attempts to go beyond the observational level towards the underlying motivations that drive people's other-regarding behaviour. We analyse a real life context using data from the customers of an online music label/store.

Magnatune ([www.magnatune.com](http://www.magnatune.com)) lets customers choose from a given price range (\$5 to \$18 for an album) recommending \$8. Hence, customers can essentially pay what they want for music. Magnatune also allows comprehensive pre-purchase access to its songs so that potential customers can discover the music they really like. Regner and Barria (2009) analyse all the label's transactions of an 18 months period and find that most customers pay significantly more than the bare minimum. The average payment per album is \$8.20, higher than the recommended price of \$8 suggested on the web site. In addition to the frequent occurrence of voluntary payments their analysis shows that these payments are not randomly distributed. Instead, type-dependant patterns among frequent customers can be observed and three main customer types can be distinguished: generally paying i) the minimum of \$5, ii) the recommended price of \$8, or iii) significantly more than \$8 on average. This would be in line with customer-specific individually heterogeneous social preferences.

Based on this finding – Magnatune customers do pay voluntarily – the aim of this paper is to find out what made customers pay more. We designed an online survey and frequent Magnatune customers were invited to participate. This way we try to gain some insights about their underlying motivations. Why do they pay voluntarily? What makes a significant portion of the customers pay more than they have to?

Generally, the empirical findings of other-regarding behaviour – in our particular context a successful voluntary payment-based or pay what you want (PWYW) business model<sup>4</sup> – can be explained with a sufficiently high level of social preferences among individuals. The link to the theory in Regner and Barria (2009) focuses on reciprocity as the source of social preferences. This seems plausible due to the comprehensive and free pre-purchase access of Magnatune that allows customers to make an informed buying decision. This aspect appears to be of significant relevance in the context of information goods markets. Ample opportunities to sample yet unknown songs – as they are provided by Magnatune – could well be regarded as kind behaviour by sufficiently socially-minded customers thus

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<sup>3</sup> See Camerer (2003) and Fehr and Schmidt (2003) for surveys of the literature on other-regarding behaviour.

<sup>4</sup> Other applications of pay-what-you-want (PWYW) models are presented in Kim et al. (2009) and Gneezy et al. (2010).

triggering a kind reaction. A voluntary payment is made, while self-interested customers only pay the minimum.

However, with mere transactions it is not possible to test whether reciprocity is the main motivation for the observed voluntary payments. Other possible underlying motives for social preferences are fairness concerns towards the artist, altruism (like the “warm glow” of feeling good from contributing to a worthy cause), social-image concerns (the desire to be liked and respected by others), guilt (the burden of paying less than one should), or social norms triggered by the recommendation of \$8. They all appear realistic in the analysed context of an online music store. It may well be that all of them are significant. More specific data is necessary and our online survey of frequent Magnatune customers tries to shed more light on the specific drivers of other-regarding behaviour.

509 frequent Magnatune customers were invited to participate and we received 227 replies. In the survey participants were asked i) open-ended questions about their online music experience (in general and specifically at Magnatune), ii) about payment behaviour at Magnatune (theirs and in general), and iii) background questions (age, gender, income, general dispositions).

The survey responses are complemented by data about the actual transactions of the invited frequent customers. This allows us to validate the participants' survey responses with respect to their own payment (is it below/around/above the recommended price?) at the individual level. There is some self-serving bias (around 15%) in the responses which we control for before proceeding to our analysis of explanatory factors of voluntary payments. As we have purchase data of all survey invitees – whether they responded or not – we can also control for sample selection bias. The main results are the following. Reciprocity appears to be a strong motivation for participants who pay generous. Also guilt seems to be a significant motivational driver to pay more than necessary. Being inclined to follow social norms is a positive determinant for payments around the recommended price. We also find some evidence for altruism to affect generous payments positively.

These results complement and extend the existing literature on social preferences. Our analysis validates previous findings from the laboratory environment for a real-life consumption context.<sup>5</sup> The survey design enables us to dig deeper than the observational level of comparable research, and we are able to contribute new results about the underlying motivations of other-regarding behaviour. To the best of our knowledge only Pruckner and Sausgruber (2008) take a similar approach in their analysis of payment honesty at Sunday newspaper vending machines using field and survey data. These insights about the specific drivers of other-regarding behaviour

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<sup>5</sup> A number of articles analyse labour market settings in the field, see for instance List (2006) or Gneezy and List (2006). The evidence for voluntary payments in consumption includes Regner and Barria (2009), Kim et al. (2009), and Gneezy et al. (2010).

should be useful for the design of voluntary payment-based business models.

The following section provides some more detail about the music label Magnatune and contains a summary of the data analysis in Regner and Barria (2009). Section 3 discusses possible motivations for other-regarding behaviour. Section 4 describes the methodological approach of the survey, Section 5 presents the results, and Section 6 discusses them. The conclusions are in Section 7.

## 2. Payment Behaviour at Magnatune

The music label / online store Magnatune was founded in October 2003 and it has around 200 artists on contract. Magnatune prides itself of having a very strict selection process to guarantee high quality. The revenue is evenly split between artist and Magnatune. Music albums are sold via the label's online store where no DRM system is implemented. Files are not protected. Quality and file format are up to the customer. The payment is variable as customers can set the price themselves. The price range for an artist's album is \$5 to \$18 and Magnatune recommends \$8. The actual price is selected by the customer in a pop-up menu where \$8 is the default setting. Magnatune is based in the USA, but as an online store it has customers around the world. Recently, Magnatune switched to a subscription-based business model. Our analysis applies to the download-based model used from 2003 to 2010.

Magnatune's artists are categorised in various different genres. There is a wide range of music available from classical music to Electronica, Jazz and Blues, Metal&Punk, New Age, Rock and Pop, World and several more. Magnatune offers a wide variety of different music genres. It can be seen as a niche label that offers music of relatively unknown artists. Mainstream music of famous artists is not sold. Therefore, the focus of Magnatune – and the paper's – is music of less-known artists and subsequently uncertain quality.

In this context experience goods aspects are of particular importance and they are well taken into account at Magnatune as music discovery is greatly facilitated. Full streaming access to all songs is provided in low or high quality. An online radio service lets customers try out songs conveniently. It can be used to listen to genre selections or artists' albums. Visitors of the site are allowed to test every song as often as they want. Essentially, consumers have all possible means available to sample music and find out how much an album is worth to them before having to make a decision about the payment. This stands in stark contrast to the usual practice of conventional online music stores where merely 30 seconds snippets of songs are available for sampling if at all. Magnatune's comprehensive pre-purchase access allows customers to make an informed buying decision.

The data set of Regner and Barria (2009) contains all 14,367 album purchases from the actual start of Magnatune's service in September 2003 until January 2005.

The average payment for an album is \$8.197, the median and mode of the distribution are both \$8. The minimum payment made is the lower limit of the price range: \$5. The data has been generated by 7,620 different customers; most of them (4,986) purchased only one album. On average customers bought 1.86 albums. The most albums a customer purchased are 49.

Regression analysis shows (with (at least) 5%-level significance) that customers who prefer to remain anonymous tend to pay less, CD buyers tend to pay more, there is no payment difference between male and female customers and there are no country effects after accounting for GDP differences. More details about the data analysis can be found in Regner and Barria (2009).

Further data analysis shows that only 14.5% of all purchases were at the required minimum of \$5, the majority of purchases were at the recommended \$8 and the average price of all purchases is \$8.20.

An interesting aspect of the collected transactions is how the voluntary payments are distributed. Do they occur in rather random fashion within the transactions of specific customers or do they mainly differ across customers? An analysis of the payment patterns of customers who had more than 15 transactions provides insight about the tendency of customers to make a decision based upon a consistent underlying motivation or not. Three different groups can be distinguished: Customers who essentially paid i) the minimum of \$5, ii) the default/recommended price of \$8, and iii) significantly more than the default/recommended price on average. It appears that customers' paying behaviour is indeed driven by underlying motivations that are specific to individuals.

### 3. Possible Motivations for Other-regarding Behaviour

The observed pattern of other-regarding behaviour can be explained with concerns for *reciprocity* applying the psychological game theory framework of Geanakoplos, Pearce and Stacchetti (1989). Regner and Barria (2009) focus on an intentions-based approach of social preferences that incorporates reciprocity into the utility function as pioneered by Rabin (1993). The resulting sequential reciprocity equilibrium following Dufwenberg and Kirchsteiger (2004) can explain the voluntary payments found in the data. Magnatune's approach (for instance, comprehensive pre-purchase access and thus a facilitated discovery of music) could be regarded as kind behaviour, particularly if contrasted with the offer of competitors (limited pre-purchase access). Customers with a sufficiently high sensitivity to reciprocity will appreciate the kind action of Magnatune and pay more than necessary, while customers with a rather low sensitivity to reciprocity will not. Hence,

the focus on reciprocity appears to be a good fit for the given context of the online music store/label Magnatune. However, reciprocity is just one possible theoretical explanation. Other plausible motives<sup>6</sup> include altruism (for instance the “warm glow” from contributing to a good cause), fairness towards the artist, social norms (following the recommendation of \$8), social-image concerns, and guilt (the burden of paying less than one should).

The voluntary payments of Magnatune customers may be motivated by *altruism*. Customers might like the basic idea of the service (quality music for a reasonably low price, equal share between artist and label, no DRM and comprehensive pre-purchase access) and might want to support Magnatune and the respective artist. Thus, they contribute with a voluntary payment in order to support the label and as well the artist being active in the future which is of benefit for them. Andreoni (1990) suggests that individuals not only derive the standard indirect benefit from their contributions (e.g. future consumption of the good), but also a direct benefit, a so-called “warm glow” from contributing to a good cause.

Artists at Magnatune are relatively unknown. Most customers will probably be on roughly the same income level than the artist they buy music from. Hence, it is possible to imagine that voluntary payments – recall that 50% goes to the artist – may be motivated by *fairness concerns* towards the artist. Fehr and Schmidt (1999) or Bolton and Ockenfels (2000) model such fairness concerns with an aversion to inequity. Payments in excess of \$5 may be motivated to reduce the perceived inequity between customer and the artist.

It seems plausible that the morality of customers plays a significant role in the highly charged field of online music. In fact, Magnatune also specifically addressed this on its web site. It promised “Internet music without the guilt” for several years. The emotion of *guilt* may be induced as customers at Magnatune are given the opportunity to pay something for the music in contrast to the downloading from P2P networks where no payments are possible. A latent guilty feeling from downloading might remain, whereas the Magnatune customers are provided with a mechanism to alleviate that – specifically reminded by the site. Elster (1998) provides a straightforward cost-benefit model to take emotions into account. Guilt could be seen as a psychic cost that is integrated into the utility function along with the material

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<sup>6</sup> Also plausible but difficult to uncover in our survey design are self-image concerns suggested in the literature on other-regarding behaviour, see for instance Bénabou and Tirole (2011). Besides social preferences, reputation concerns are another possible theoretical explanation for generous payments in repeated interaction. However, music customers generally know that they do not enter a specific relationship with the artist when they decide to purchase an album. The artist might appreciate the voluntary payment of a customer and the customer might even be identifiable by the email address, but still the next album will be produced for the general audience and not for a specific customer. This is important, because it excludes strategic considerations like reputation as the motivation for voluntary payments at Magnatune.

payoffs. A trade-off between the moral emotions and material self-interest is created. When the psychic cost of guilt – e.g. the moral burden of paying less than one should – outweighs the material gain, the customer would decide to pay more to alleviate the guilt induced (see for instance Ruffle, 1999, or Dufwenberg, 2002). In both approaches the customer's choice depends on how sensitive to guilt she is. Paying only the minimum causes a psychic cost of guilt, which however may not affect the customer's utility, if she is "immune" against it. Customers with a high sensitivity to guilt may chose to make a voluntary payment as this alleviates their guilt and maximizes their utility.

Voluntary payments could also be due to *social-image concerns*. In addition to monetary payoffs social-image models (see for instance Bénabou and Tirole, 2006) allow individuals to be also motivated by the desire to be liked and respected by others. The relevance of social-image concerns in charity contexts is analysed by Ariely et al. (2009) who show that participants exert more effort (i.e. donate more) in a public than in a private setting, and DellaVigna et al. (2009) who connect door-to-door charity giving to potentially welfare-reducing effects of social pressure. The visibility of paying for music at an online store is certainly rather low, but we do not know to what extent customers disclose their payment behaviour in their relevant community. They may talk about their purchase and what they pay, and then social reputation could matter. Hence, it may still be interesting to see whether social-image concerns are an underlying motivation for being generous.

Finally, conforming to a *social norm* is another relevant motivation for other-regarding behaviour (see for instance Bernheim, 1994). Magnatune explicitly recommends \$8 for the payment. Hence, the social norm in this situation is made very salient. This should lead to a high level of norm-following behaviour<sup>7</sup> if customers are indeed motivated to obey norms.

## 4. Survey

### 4.1. Design and Methodology

While the observational level data in Regner and Barria (2009) is useful to test for the existence of social preferences among customers, it is not helpful to distinguish between the precise motivations of customers to give more than they have to. A logical further step of analysis would address the actual drivers of customers' behaviour more directly. Therefore, we designed a questionnaire to complement the analysis of the purchase data. As illustrated in the survey literature (see for instance Bertrand and

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<sup>7</sup> See Bicchieri (2006) for an overview of the literature on social norms.



Mullainathan, 2001) the challenge is to obtain unbiased responses to the questions of the survey. Among the factors potentially causing bias in survey responses social desirability may be the most relevant one in our context. Respondents want to look good in front of the interviewer, and their answers may be biased towards those options that respondents expect the interviewer to think are correct. Our online survey keeps the interviewer effect at a minimum compared to surveys conducted face-to-face or via telephone. But participants may still want to look good in front of the interviewing entity (or themselves), and – if they know or assume the purpose of the survey – they may answer what they believe is expected from them. Naturally, these issues are particularly relevant for a survey, if its goal is to ask about voluntary payments and to elicit underlying motivations for payment behaviour. While we wanted to find out as much as possible about the motifs of the three main customer types, we couldn't ask this in a too direct manner. Hence, we decided to let survey participants write freely about their online music and Magnatune experience hoping to catch insights about their motivation. After this free-wheeling part we asked participants to tell us how much they generally pay for a Magnatune album (less/around/more than the recommended price of \$8). A set of background questions followed. A separate data set containing the purchases of the invited customers allowed us to verify the survey responses with respect to the payment behaviour.

Only Magnatune customers with at least 10 previous purchases received an email invitation to the online survey which took place in April 2007. Participants in the survey remained anonymous. Completion of the questionnaire was rewarded with an \$8 gift card. We received 231 responses out of 509 invitations sent out. Four participants quit during the first question. The survey consisted of i) three open-end questions about participants' online music experience (reasons for shopping music online, what distinguishes Magnatune from other sites, benefits of purchasing music at Magnatune), ii) a question about their actual payment behaviour at Magnatune (is it less/around/above recommended price?) plus follow-up questions (reasons for paying less/around/above, list of potential reasons why others pay more than necessary, estimate of average payment for an album at Magnatune), and iii) background questions (age, country, gender, income, education, whether one actively makes music, how frequently one donates to charity, sensitivity to positive<sup>8</sup>/negative reciprocity, the consideration of what others believe is appropriate, and how important it is to you what others think of you). The complete question texts of the survey can be found in the Appendix.

The first three open-end questions gave participants a chance to write about their motivation/experience in an essay style. They could still write freely in some of the questions following the payment question (number 4), but the survey's focus was now noticeably on payment aspects. The remaining

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<sup>8</sup> The same question text as in Leuven et al. (2005), a comparable study, is used.

multiple choice questions aimed at collecting some background information and general dispositions of the participants.

Participants could select one of five age brackets (19 years or younger, 20-29, 30-39, 40-49, 50 years or older). Ranges for *personal income* were less than \$500, \$500-\$999, \$1000-\$1999, \$2000-\$2999, \$3000-\$3999, \$4000-\$4999, \$5000-\$5999 or more than \$6000. “Never”, “occasionally” or “frequently” were the options for the *donations* question. The 5-scale for the statement "It is important to me what others think of me" went from “very important” to “not important at all”. Scores for the remaining questions were given on a 7-scale from “certainly yes” to certainly no”.

Answers to these background questions were not compulsory. The question most often skipped was the one with respect to the personal income (22 times). Histograms for the background questions are provided in the Appendix.

The answers to the open-end questions were encoded by a research assistant who was naïve with respect to the goal of this study. In a first step of analysis the answers to each question were clustered into topical groups. If an answer contained an aspect that was not covered by an already existing group, then a new group was created. This procedure ensured a neutral approach to the various motivations voiced by the participants. Table 1 provides the result of the clustering for question 3. Naturally, several groups could have been mentioned in a participant’s answer text resulting in more total answers for the groups than there are participants.

TABLE 1: Clustering of text answers into groups

*Question 3: What do you think are your benefits when purchasing a piece of music at Magnatune? Please describe why this is important to you*

<b>Clustered group</b>	<b>Number of arguments</b>	<b>in %</b>
(1) Fairness to/support of the artist	101	15.63
(2) High quality downloads (lossless format)	55	8.51
(3) “listen before buy” - better decision possible	53	8.20
(4) supporting an alternative way of business (no RIAA)	51	7.89
(5) good/alternative selection	49	7.59
(6) Choice of format and bit rate	47	7.28
(7) No DRM	47	7.28
(8) Price Model (pay what worth to me)	38	5.88
(9) Freedom to use the music everywhere and anytime	32	4.95
(10) Fair price / bargain	27	4.18
(11) Possibility of discovering new talents	27	4.18
(12) Open sharing policy (with friends/family)	26	4.02
(13) Ease of use (the website/system)	23	3.56
(14) Possibility of multiple download	16	2.48
(15) Convenience of downloading (not leaving home, immediately available, etc.)	12	1.86
(16) Possibility of reformat	6	0.93
(17) more about music than marketing	5	0.77
(18) Speed of download	5	0.77

(19)Usable on Linux	5	0.77
(20)High quality customer service	4	0.62
(21)Knowledge of having legally purchased	4	0.62
(22)Convenience of having digital format (no ripping, storage, etc.)	3	0.46
(23)feeling of being close to the artist	3	0.46
(24)Downloading the cover	2	0.31
(25)Moral obligation to pay for music / being pushed to pay	2	0.31
(26)No need of jewel cases (green idea, less storage space)	2	0.31
(27)offer of burning CDs	1	0.15
<b>TOTAL</b>	<b>646</b>	<b>100</b>

In a second step the various groups were assessed. Based on their contextual proximity higher-level categories were formed.

The categories resulting from the analysis are shown in Table 2, again using question 3 as the example. A category counts as mentioned by the participant, if he or she wrote about at least one of the category's groups. The most frequent response was support of the artist (category 1). A number of answers mentioned reasons specific to Magnatune: its idea/business model (4), its particular music collection (7) and technical aspects excluding DRM reasons (2). Another recurring theme customers mentioned was the so-called "try before you buy" concept that allows web site visitors to get familiar with an album via the online stream before a purchase decision has to be made (3). The fact that Magnatune does not implement any Digital Rights Management was another significant topic in the response of several participants (8). Finally, some customers referred to online music in general (6) and to guilt/a moral obligation (5).

TABLE 2: Clustering of groups into categories				
<i>Question 3: What do you think are your benefits when purchasing a piece of music at Magnatune? Please describe why this is important to you</i>				
<b>Category</b>	<b>Category code</b>	<b>Groups included</b>	<b>Number of arguments</b>	<b>in % (of 227)</b>
support of the artist	1	1, 23	104	45.81
Magnatune specific – technical	2	2, 6, 13, 14, 16, 18, 19, 20, 24, 27	105	46.26
"try before buy"	3	3	51	22.47
Magnatune specific - idea/business	4	4, 8, 10, 17	97	42.73
Guilt	5	21, 25	5	2.20
online music general	6	15, 22, 26	21	9.25
Magnatune specific - music	7	5, 11	70	30.84
No DRM	8	7, 9, 12	69	30.40
<b>TOTAL</b>	-		<b>522</b>	-

The purpose of the first three questions of the online survey was to give participants an opportunity to write freely about what they believe matters in online music. These questions were not mutually exclusive. The first one was kept very general (“reasons for shopping music online”), the second one focused on Magnatune (“in what ways does Magnatune differ from other music sites?”) and the third one eventually asked about the specific benefits when purchasing at Magnatune. Naturally, also answers were not given in a mutually exclusive way. Several participants referred to aspects already written in a previous answer. The idea of this approach was to cover all aspects that could possibly matter to customers and to avoid any bias due to ex-ante assumptions participants make about the purpose of the survey. Figure 1 shows the frequency of each category across the first three questions. No significant correlations were found between categories within and across questions. A principal component analysis did not indicate a clustering of variables is advisable. The remaining analysis focuses on question 3, the one about the specific benefits at Magnatune.

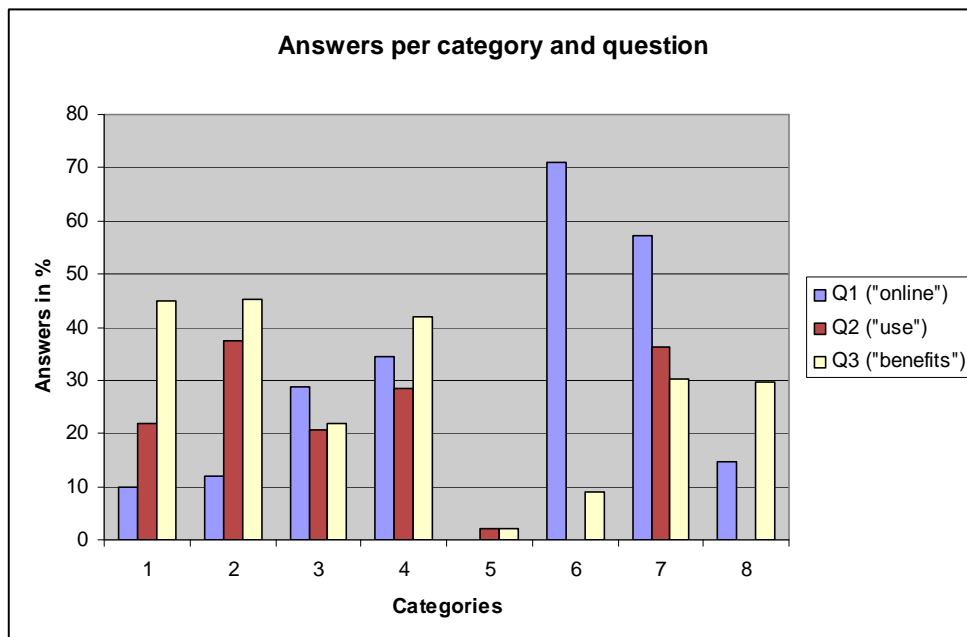


Figure 1: Answers per category and question

Question 4 asked participants to indicate whether they generally pay less, around the recommended price of \$8, or above it. It seems unlikely participants realised during the first three questions that the survey targets their payment behaviour. Hence, the first three questions can be regarded as rather implicit and probably best suited to elicit the actual motivations or underlying reasons for their payment behaviour. Question 4 and the following ones are more or less directly about their payment, though. These questions have a more explicit character, and in a way they give us an

indication about the participants' ex-post reasoning about their payment decision.

#### 4.2. Behavioural Predictions

The survey responses of frequent Magnatune customers give us an opportunity to study their underlying motivations for paying more than necessary. Being able to analyse what really drives their behaviour is a substantial advantage in comparison to research that is limited to the observational level. On the other hand, we are not in a position to test the predictions of specific models for social preferences, say inequity aversion, which however is not the goal of the paper, anyway. Instead, we use what participants write about in part 1 of the survey, and the data about their background / general dispositions from part 3 to proxy the potential motivations we identified.

We have two variables to proxy for reciprocity concerns. The score of the question about positive reciprocity in part 3 indicates the general tendency of a person to reciprocate in a positive way. The category "try before buy" in the free-writing part of the survey shows that the customer acknowledges the kind behaviour of Magnatune. Fairness as a motivation is measured by the "support of the artist" category. Altruism as a motivation is proxied by a person's general tendency to give (the frequency of donating), and one's proximity to the music profession (the dummy for actively making music).

Guilt as a motivation is measured by its respective category in the survey. The score for the statement "It is important to me what others think of me" is used to assess the role social-image concerns may play for a person's decision. The question about the consideration of what others believe is appropriate is used as an indicator of a person's inclination to follow social norms.

We do not expect the various motivations to be mutually exclusive, that is we do not intend to test them against each other. All may play a role in driving customers' behaviour, and the analysis aims to find out which of them are relevant in the context we study.

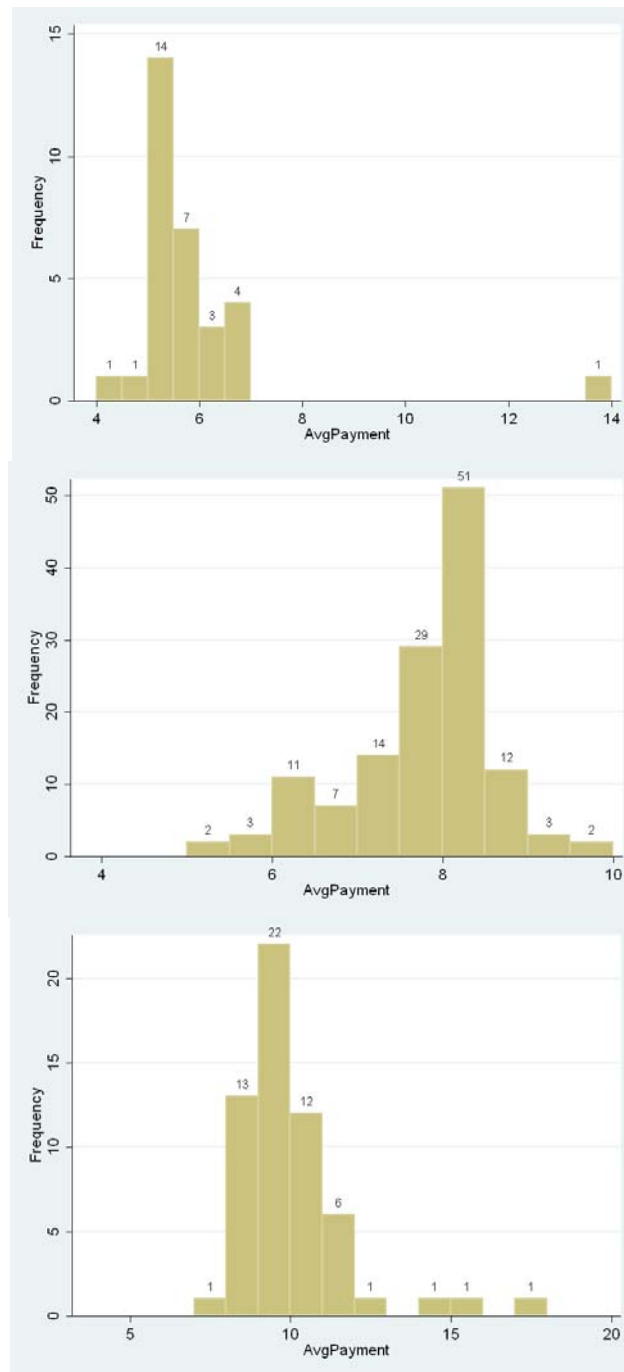
### 5. Results

We start our analysis by looking at participants' answers about their own payment. 13.66% of survey participants said they generally pay less than the recommended price, 60.35% replied they pay around, and 25.99% said they usually pay more than that. Since we also have the purchase data of survey participants<sup>9</sup> we can double check on an individual level, whether their

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<sup>9</sup> Purchase data is available for all but four survey participants. Customers at Magnatune can also license music for commercial reasons, but the PWYW model does not apply to music licenses. Four survey participants had less than the necessary ten purchases after the correction for license purchases.

responses correspond to their actual purchase history at Magnatune. Figure 2 shows the distributions of the actual average payments of participants split into the three categories.



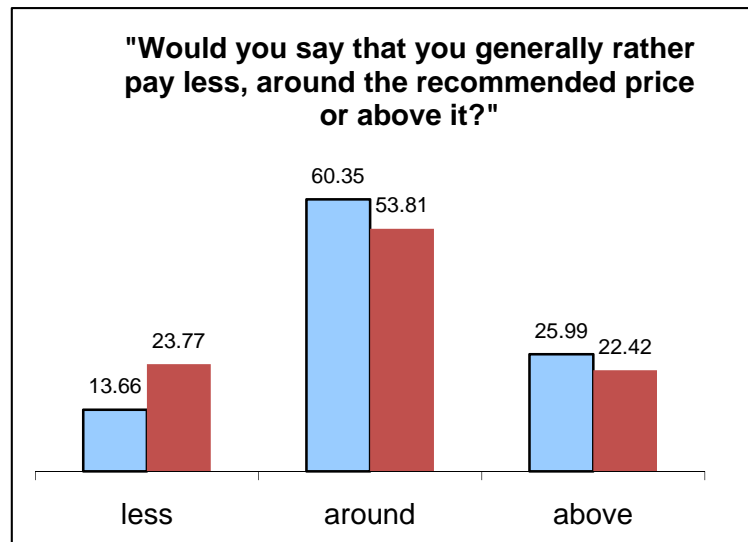
**Figure 2: Distributions of the actual average payments by payment type (top/middle/bottom: below/around/above recommended price)**

Given that the survey ran in 2007 and purchases were possible from 2003 onwards, participants may not perfectly remember their purchasing record. In order to determine whether a response contains a bias, we count average payments of up to \$7 as being in line with a reply of “less”, average payments in the range of \$7 to \$9 as in line with “around”, and average payments of more than \$9 as in line with “above”. See Table 3 for the results of this within-participant verification of the survey responses with respect to payment behaviour. Out of the 134/58 participants who replied around/above 23/14 or 17.16%/24.13% (aggregate 19.27%) biased the answer about their payment behaviour upwards, intentionally or not. In contrast, out of the 31/134 participants who replied less/around 1/5 or in total 3.64% biased their answer downwards.

Survey response to „Own payment less/around/above recommended price (\$8)“	Number of participants with verifiable payment data	Survey response biased upwards	Survey response in line with payments	Survey response biased downwards
less	31	n/a	30	1
around	134	23	106	5
above	58	14	44	n/a
TOTAL	223	37	180	6

While the incentive for an upward bias is clear, there does not seem to be a motivation for the downward bias of some participants. They possibly did not remember too well. Taking the fraction of downward bias as a baseline for measurement error, about 15% remains for the fraction of participants who may have intentionally biased the response about their payment behaviour in a self-serving fashion.

We control for this *individual response bias* in the following regression analysis by re-coding participants' responses about their payment (OwnPayment) to the correct value according to their transactions. This results in 53 survey participants actually paying below, 120 around, and 50 paying above the recommended price. Alternatively, only the 180 survey responses in line with actual payments could be used for the analysis. The two approaches do not differ qualitatively in the results they produce. Figure 3 contrasts the self-categorised payment types based on the survey responses and the payment types based on the actual purchase data of customers.



**Figure 3: Self-categorised (left) and actual payment (right) types of customers**

509 frequent Magnatune customers were invited to take part in the survey. 278 of them did not reply and four quit the survey during the first question. For most of the survey invitees (227 survey participants and 282 non-respondents) actual payment data is available.<sup>10</sup> This data includes all purchases (with payment and date) of the survey invitees, and information about the country of the invitee. Since the decision to respond and take part in the survey may depend on factors not independent from the actual survey replies, the available data for all invitees allows us to control for potential *sample selection bias*. For instance, customers who are more generous may also be more inclined to respond to the survey request, which is in fact the case (survey participants:  $M = 8.05$ , non-respondents:  $M = 7.64$ , ranksum test:  $p = 0.05$ ). Hence, we compute the average payment of the (at least ten) purchases, the total amount of purchases (both at the time of the survey), and dummies for the most popular countries in order to address this issue of selection.

Column I of Table 4 shows regression results for an ordered probit model with the self-categorised but bias-corrected payment type of participants as the dependant variable (*PaymentType* being less/around/above the recommended price).

We then present two sample selection models (columns II and III). The selection equation is the same for both. It features the actual average payment, the total purchases, and the country dummies to explain the decision to take part in the survey. In the first sample selection specification (column II) *PaymentType* is the dependant variable. The second specification in column III generalises from the categorisation into types and

<sup>10</sup> Four frequent customers bought predominantly licenses and thus payment data for album downloads is not available (see also footnote 8).



uses the actual average payment (*AvgPayment*) as dependant variable. In this specification we pass on the country dummies in the payment equation in order to keep rho in the acceptable range of -1 to 1. Running the ordered probit of specification II without the country dummies does not change the significance levels of the results described in the following.

Dependant variable	I: PaymentType		II: PaymentType with selection model		III: AvgPayment with selection model	
	Coefficient	St. error	Coefficient	St. error	Coefficient	St. error
Cat_SupportArtist	.1477	.1799	.2214	.1362	.2335	.2377
Cat_MagnatuneTech	-.199	.18	-.0808	.1271	-.0385	.2396
Cat_TryBeforeBuy	.7051	.2065 ***	.3293	.1624 **	.7226	.2674 ***
Cat_MagnatuneIdea	.1781	.1769	.1146	.1203	.1661	.2352
Cat_Guilt	1.197	.6223 **	.9076	.5116 *	1.552	.7849 **
Cat_OnlineMusic	-.0753	.3143	.1535	.2326	-.4092	.4109
Cat_MagnatuneMusic	.1237	.1976	.1038	.1471	.1581	.2588
Cat_NoDRM	-.0636	.1986	-.0241	.1384	.0029	.2622
age_20to29	.2703	.611	-.0094	.4072	-.8446	.786
age_30to39	-.5529	.6238	-.3269	.4156	-1.554	.8026 *
age_40to49	-.6896	.6341	-.4132	.4295	-1.341	.8124 *
age_50+	-.3577	.6125	-.2399	.4117	-1.373	.7909 *
USA	-.0016	.2131	.1434	.2003	--	--
Japan	-.307	.5093	-.4081	.4142	--	--
Canada	-.0727	.2741	-.1724	.2566	--	--
Germany	-.1183	.3309	-.1824	.3067	--	--
UK	-.1699	.2508	-.1769	.2228	--	--
France	-1.058	.3975	-.6201	.3174 **	--	--
female	.2104	.3276	-.0881	.3742	.8625	.4315
income_less500	-.7532	.4162 *	-.2831	.2668	-.9492	.5454 *
income_1000to1999	-1.552	.6001 ***	-1.039	.3112	-1.291	.7734 *
income_2000to2999	.0378	.3212	.19	.2416	-.2249	.4298
income_3000to3999	.0123	.3103	.0248	.2387	.1384	.4104
income_4000to4999	.1225	.314	.0341	.2347	-.0537	.4181*
income_5000to6000	.8037	.3543 **	.311	.2885	.7975	.4666
income_6000+	.6979	.2995 **	.3526	.2445	.8618	.3971 **
education_uni	.0583	.351	-.0628	.2367	.4327	.4645
education_PhD	-.1411	.2706	-.1292	.1808	.0243	.3549
donations_never	.2297	.3255	.1299	.2103	.2445	.4191
donations_frequently	.5257	.1929 ***	.24	.1407 *	.6149	.2559 **
ActivelyMakingMusic	.2265	.2166	.0765	.1683	.0145	.2876
SocialImage	-.673	.5647	-.3025	.3818	-1.194	.7537
PositiveReciprocity	-.005	.086	.0833	.051	.0116	.1103
SocialNorms	.6281	.2596 **	.3531	.1707 **	1.192	.3449 ***
SocialNorms_sq	-.0865	.0321 ***	-.0538	.0219 **	-.1562	.0427 ***
constant	-.0745	.6364	.3086	.4754	7.385	.9235 ***

SELECTION EQUATION (N = 501): participated in survey yes (N=223), no (N=278)					
Total Purchases	--	.0063	.0079	.0237	.0074 ***
Average Payment	--	.1477	.0362 ***	.0834	.0351 **
USA	--	.1354	.1662	.587	.1508 ***
Japan	--	.7831	.3937 **	.8887	.4011 **
Canada	--	.7244	.4076 *	1.221	.2892 ***
Germany	--	.3176	.2822	.5743	.2481 **
UK	--	.7547	.2641 ***	1.104	.2261 ***
France	--	.7563	.324 **	.7767	.3215 **
constant	--	-1.634	.3402 ***	-1.842	.3288 ***
rho	--		-.99		-.57
SIGNIFICANCE LEVELS: *** = 1%, ** = 5%, * = 10%					

Explanatory variables are the category entries for question 3 of part 1 (“benefits when purchasing a piece of music at Magnatune”), the scores of the questions about positive reciprocity, social norms, social-image concerns, whether one is “actively making music” and the extent of “donations”. We add a quadratic term of the SocialNorms score to allow for a non-linear relationship between SocialNorms and the payment. Control variables include age, country, gender, income, and education.

In specifications II and III the error terms of the selection and the payment equation are significantly correlated, confirming our approach to control for sample selection bias. Moreover, the variables used in the selection equation appear to have a significant effect on the decision to take part in the survey.

Compared to the “baseline” ordered probit model of column I controlling for the sample selection bias in specifications II and III reduces coefficients of variables of interest (a “baseline” OLS regression without sample selection that is comparable to III is not reported), but does not change the results in a qualitative way. The coefficient of the category TryBeforeBuy is positive and highly significant (II: 5%-level, III: 1%-level). The coefficient of the category Guilt is also positive and significant (II: 10%-level, III: 5%-level). None of the other categories seem to explain payments at a significant level. The coefficient of the linear/quadratic term of SocialNorms is positive/negative, and both are highly significant (II: 5%-level, III: 1%-level). The coefficient of the tendency to donate frequently is also positive and significant (at the 10%-level in II, at the 5%-level in III). The second, more general, proxy for reciprocity has a positive coefficient after controlling for sample selection, but it is not statistically significant below the 10%-level.

Controlling for sample selection bias has the biggest impact on the effect of personal income. While in specification I coefficients of low income regions tend to be negative and coefficients of high income regions tend to be significantly positive, only in specification III coefficients of low income regions are negative (significant at the 10%-level) and the coefficient of the highest income region is significantly positive (1%-level). Specification II

does not suggest any income effects. No age dummy is significant at the 5%-level, and only the coefficient for France is negative and significant at the 5%-level in specification II.

In question 5 participants were asked to write about the factors that led to their payment behaviour depending on what they answered in the previous question (decision to pay less/around/more than the recommended price). Tables 5-7 show the clustered responses of participants. As in the previous qualitative analysis one participant could have mentioned several arguments in the text response meaning that the total number of arguments may be greater than the actual number of participants of the type.

Naturally, self-interest and a limiting budget are given as reasons for paying less than the recommended price. Some participants apply a volume discount to themselves paying less when buying several albums.

TABLE 5: Answers to question 5a			
<i>Question 5b: What factors led to your decision to pay less than the recommended price?</i>			
	<b>Clustered group</b>	<b>Number of arguments</b>	<b>in %</b>
	Self-interest / excuses for self-interest	16	50
	Budget restriction	12	37.5
	Volume discount	5	15.6
<b>TOTAL</b>		<b>33</b>	

When participants are explicitly asked to give their reasons for paying more than necessary, fairness concerns are the dominant factor mentioned (two thirds of all participants paying around or more than \$8). Around 40% write that the music at Magnatune affected their decision to pay more than they have to. Around a quarter of participants who pay around the recommended price state that they do so to conform to a social norm. Only very few participants who paid around \$8 mention guilt or the “try before buy” feature as the factor that led to their decision. None of the participants who paid more than \$8 explicitly referred to guilt or reciprocity. It seems that they do reason their generous decisions with fairness arguments when asked explicitly, but based on the analysis of the first 3 questions fairness concerns do not explain their motivation.

TABLE 6: Answers to question 5b			
<i>Question 5b: What factors led to your decision to pay around the recommended price?</i>			
	<b>Clustered group</b>	<b>Number of arguments</b>	<b>in %</b>
	Fairness to/support of the artist	88	66.4
	Magnatune specific - music	27	42.2
	Conformity/social norms	27	27.6
	"still good price"	19	11.6

Budget flexibility	19	8.2
Magnatune specific - idea/business	11	6.0
Self-interest / excuses for self-interest	10	6.0
Experience good aspects	9	5.6
Volume discount	6	4.3
Guilt	5	3.9
"try before buy"	2	0.9
Magnatune specific - technical	1	3.9
No DRM	1	3.9
<b>TOTAL</b>	<b>225</b>	

TABLE 7: Answers to question 5c			
<i>Question 5c: What factors led to your decision to pay more than the recommended price?</i>			
<b>Clustered group</b>	<b>Number of arguments</b>	<b>in %</b>	
Fairness to/support of the artist	42	66.7	
Magnatune specific - music	28	44.4	
Magnatune specific - idea/business	19	30.2	
"still good price"	14	22.2	
Budget flexibility	7	11.1	
No DRM	4	6.3	
Magnatune specific - technical	1	1.6	
<b>TOTAL</b>	<b>115</b>		

Table 8 shows what participants replied to question 6 of the survey. Interestingly, there is again a discrepancy between what participants believe are potential reasons why people may make a generous payment and the actual motivation from questions 1-3. Two thirds of participants mention fairness to the artist, while "try before buy" is only mentioned twice as a potential reason why people may make a generous payment. It appears that being reciprocal drives behaviour, but it is not anticipated by customers that it does so.

TABLE 8: Answers to question 6			
<i>Question 6: If you made a list of all potential reasons why people might make a payment above the minimum or even more than the recommended price, what do you think would be on such a list?</i>			
<b>Clustered group</b>	<b>Number of arguments</b>	<b>in %</b>	
Fairness to/support of the artist	154	66.4	
Magnatune specific - music	98	42.2	
Magnatune specific - idea/business	64	27.6	
"feel good"/pride	27	11.6	
budget flexibility	19	8.2	
Guilt	14	6.0	
"still good price"	14	6.0	

Magnatune specific - technical	13	5.6
No DRM	10	4.3
conformity/social norms	9	3.9
"try before buy"	2	0.9
<b>TOTAL</b>	<b>424</b>	

Finally, Figure 4 shows what participants believe is the average payment for a downloaded album at Magnatune. This question was only answered by 215 participants.

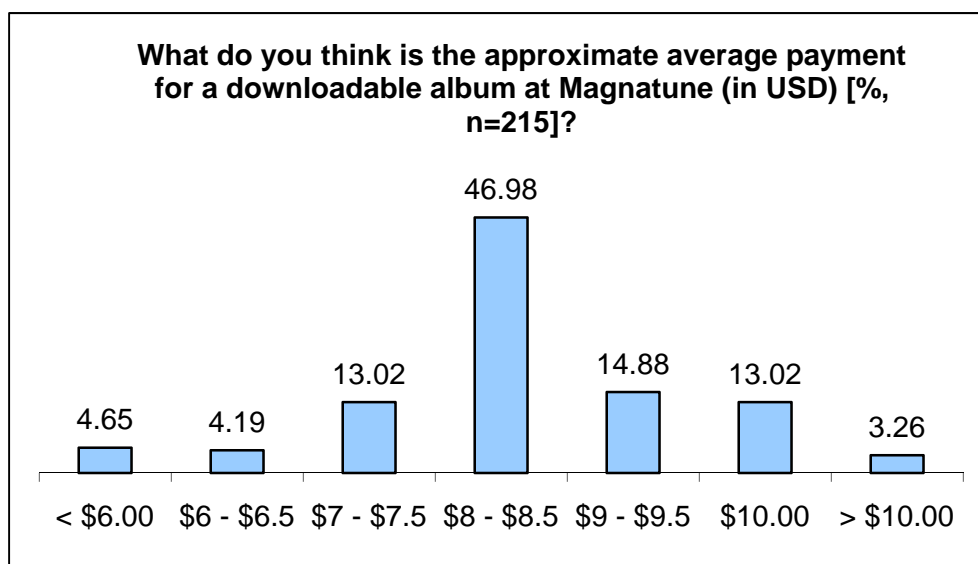


Figure 4: Estimated payment for an album at Magnatune

## 6. Discussion

After controlling for age, country, gender, income, and education of the survey participants we find strong support for reciprocity<sup>11</sup> and guilt as motivations for generous voluntary payments. In specification III of our analysis – the least restrictive, using actual average payments instead of payment types – the coefficients for the categories TryBeforeBuy and Guilt are very significant (1%- and 5%-level). Guilt seems to have the strongest effect on behaviour in the context we analysed, but it applies only to a few people. Only 5 participants mentioned it in the survey, in comparison 51 wrote about TryBeforeBuy. We also find strong support for the impact of social norms on the payment behaviour at Magnatune. Payments around the

<sup>11</sup> The second reciprocity proxy, a general dispositions measure from part 3 of the survey, has a positive effect as well, but not at a statistically significant level. This abstract measure is apparently not sufficient to explain behaviour in a very specific context. A combined reciprocity measure consisting of the two proxies in equal parts is highly significant.

recommended price of \$8 are more likely for customers who are more inclined to follow what others believe is appropriate. On the other hand generous payments are less likely for customers who have a tendency to follow social norms. We also find a correlation between the frequency of donating to charities and generous payments, a result that may be attributed to altruism.

We do not find support for fairness concerns as a driver of voluntary payments. Support for the artist is the category that is mentioned second most (104 participants or almost half of them), but it does not make customers more generous it seems. Interestingly, participants mention fairness concerns and supporting the artist as the most common reasons to pay more than necessary for themselves and when they were asked about people in general. There seems to be a discrepancy between the ex-post reasoning for generous decisions and the actual motivations as customers expect fairness concerns to lead to generous payments, although there is no evidence in the data that it does drives behaviour.

Generally, the results tend to support intentions-based approaches to explain other-regarding behaviour. That is, generously paying Magnatune customers seem to be motivated by reciprocity – being kind when someone else acted kind – or guilt aversion – being kind in order to avoid that someone else is disappointed. As described before, the online label/store Magnatune does arguably very well in offering great value. Customers respond to this and pay generously, at least a substantial fraction of them. In addition, the market for music by relatively unknown artists may be especially suited to attract consumers with these motivations.

The recommended price of \$8 has a significant influence on payment behaviour, and it seems that it particularly attracts customers who have an inclination to follow social norms. Essentially it serves as a default or focal point for such customers. Whether the reference price mostly drives customers to pay \$8 who otherwise would have paid less, or whether it gives customers an excuse to pay only \$8 who otherwise would have paid more is an intriguing question, but for now is left for future research.

Social-image concerns have been shown to be a significant determinant of publicly donating in the experiments of Ariely et al. (2009). They are also a plausible explanation for the donations in DellaVigna et al. (2009) and Gneezy et al. (2010). Their settings – door-to-door giving to a charity campaign and paying as much as you want for a picture of a roller coaster ride when 50% of the payment goes to charity – are rather public, with high visibility of the pro-social action. In the more private context of online consumption social-image concerns do not seem to be a motivation for other-regarding behaviour.

## 7. Conclusions

The voluntary payment-based or pay what you want (PWYW) business model of the online music label/store Magnatune features a minimum price of \$5 and a price recommendation of 8\$ for a music album. We connect purchase data of frequent customers to their responses to a survey in order to analyse their payment behaviour. This real life data from a consumption context enables us to go beyond the observational level of purchases and gain insights about the underlying motivations that drive other-regarding behaviour, in particular in a consumption context.

Our analysis shows that reciprocity and guilt appear to be a substantial motivation for generous payment behaviour. Other motivational variables have low explanatory power (“warm glow” altruism) or none (fairness towards the artist, social-image concerns). Finally, we find evidence for the effect of social norms as participants who usually pay around the recommended price are more likely to have a tendency to follow what others believe is appropriate. These findings should be beneficial for a better understanding of the scope of PWYW models<sup>12</sup>, when they work and why.

Such a PWYW model can be interpreted as giving customers an opportunity to reciprocate. They receive a product or service and are free to decide the price they pay for it. Then their payment decision tends to be affected by their perception of the quality of the product/service and how pleasant the offering is. In the case of Magnatune this is for instance the comprehensive pre-purchase access that allows customers to make an informed purchase decision. Our research indicates that it is in fact reciprocity that leads to generous payments. Customers who acknowledge the specific kind behaviour of Magnatune, the “try before buy” feature, tend to pay more. These results suggest that it is important for the success of a standard PWYW model to attract a substantial part of reciprocal customers, and to have a convincing product/service that appeals to them.

The two additional features of the PWYW model at Magnatune are a minimum price and a price recommendation. Naturally, requiring a payment of at least \$5 keeps free riders out, but the minimum may be set too high (turning away potential customers who would have been willing to pay slightly less) or too low (quasi-free riders may have paid also a bit more). In the case of Magnatune it appears to work well, but it should be an interesting question for future research on PWYW models what an optimal minimum price is.

The price recommendation of \$8 also seems to be a successful feature. It serves as a reminder what should be paid and in particular customers who consider strongly what others believe is appropriate tend to follow this implemented social norm. Paying around the recommended price is the most prominent payment type, and this suggests that it is in fact a useful

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<sup>12</sup> See also Kim et al. (2009) or Gneezy et al. (2010).

feature for a PWYW model. It attracts customers who look for a reference, although it is not clear whether more customers pay \$8 who otherwise would have paid less, than customers who use the reference as an excuse to pay only \$8 who otherwise would have paid more. The fact that the payment types “around” and “above” are different in their dispositions may suggest that a price recommendation does not necessarily cannibalise would be-generous customers.

The success of a PWYW model is intriguing, even more so when it is better understood why it works. While the conditions at Magnatune are certainly specific, they are not exogenously given. It is not too far-fetched to think of similar settings where PWYW models should thrive, because they attract responsible customers and appeal to their needs. Additional features like the minimum price and a price recommendation implemented by Magnatune support the reciprocal concept and stabilise the model. They seem to be a good fit for Magnatune. Another feature, combining the payment with a donation to a charity, has been shown to work well by Gneezy et al. (2010), and may be particularly suitable for environments with a high visibility of the payment act, i.e. where social-image concerns are more prominent.



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## Appendix

### 1. Open-end and multiple choice questions of the survey

Question number	Question
1	Please list your reasons for shopping music online.
2	Do you use other online music sites? If so, in what ways does Magnatune differ in your opinion?
3	What do you think are your benefits when purchasing a piece of music at Magnatune? Please describe why this is important to you.
4	Would you say that you generally rather pay less, around the recommended price or above it?
5	What factors led to your decision to pay less/around/more than the recommended price?
6	If you made a list of all potential reasons why people might make a payment above the minimum or even more than the recommended price, what do you think would be on such a list?
7	What do you think is the approximate average payment for a downloadable album at Magnatune (in USD)?

Variable	Question
Age	What is your age?
Country	In which country do you live?
Gender	What is your gender?
Income	In which range is your monthly personal income?
Education	What is your educational background (e.g. high school diploma, university degree)?
ActiveMusic	Do you actively make music, for instance as a member of a band?
SocialImage	Please rank the following statement: "It is important to me what others think of me."
Donations	Are you donating to charities and if so how often?
PositiveReciprocity	If someone does something that is beneficial to you, would you be prepared to return a favour, even when this was not agreed upon in advance?
SocialNorms	Do you tend to consider strongly what others believe is appropriate when you make a decision?
NegativeReciprocity	If somebody puts me in a difficult position, I will do the same to him/her. Would this apply to you?

## 2. Socio-demographic analysis

