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Pay What You Want: An Exploratory Study of Social Exchange and Buyer-Determined Prices of iProducts

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Communications of the Association for Information Systems

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Abstract:

The online marketplace has provided sellers an arena for marketing digital products and radically changing traditional distribution processes. Online sellers have also experimented with buyer-determined pricing schemes, such as the "Pay What You Want" model that is the focus of this study. Under this pricing scheme, buyers are allowed absolute control over the price of the transaction, including the amount of zero if desired. Using Social Exchange Theory as a guide, we explored the possibility that a buyer's price he or she is willing to pay and the price actually paid for a digital product on the iTunes marketplace can differ based on social and economic factors associated with the transaction. While this study offers an exploratory look into the PWYW model in an online setting, the results provide insight for product developers and marketers considering this pricing scheme.

Keywords: e-commerce; social exchange; buyer-determined pricing; digital products

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I. INTRODUCTION

Companies have sold their products and services online for over ten years. The online marketplace has opened up new markets that were previously inaccessible to traditional “brick-and-mortar” businesses. The Internet also allows firms to market digital products, which are described as products primarily composed of attributes that can be communicated over a network, with marginal costs approaching zero [Lal and Sarvary, 1999]. As a result of offering these products, Internet firms have modified traditional processes of production, inventory, and distribution, but they have also experimented with different and unique pricing strategies for their digital products. Previous work has detailed how electronic commerce allows companies the capability of offering differential pricing to a heterogeneous customer base and the ability to bypass intermediaries that have traditionally handled purchases [Clemons et al., 2002]. Some pricing strategies that firms use to flexibly adjust prices and that are frequently found in e-commerce include reverse auctions, bundle pricing, and “dynamic coupons” [Kannan and Kopalle, 2001]. Of particular interest to this study is the dynamic pricing strategy known as “Pay What You Want” (hereafter referred to as PWYW). PWYW is defined as “a participative pricing model in which a buyer’s control over the price setting is at a maximum level” [Kim et al., 2009, p. 44]. PWYW differs from the “Name Your Own Price” (or Priceline) pricing model in that there is no threshold price serving as the minimum the seller is willing to accept for the product [Hann and Terwiesch, 2003]. In PWYW, the customer can decide to pay absolutely nothing for the product if he or she so desires.

PWYW is an example of participative pricing mechanisms that have received attention from e-commerce firms and have been used in recent high-profile business efforts. An online store may be the ideal marketplace to realize the possible benefits of PWYW transactions. The low marginal costs of reproducing and distributing digital products may be particularly suited for PWYW pricing. Among the reasons firms choose a PWYW pricing mechanism are: attracting the attention of new customers, increasing “word of mouth” marketing, and enhancing consumers’ perceptions of the vendor’s innovativeness [Kim et al., 2009]. For online vendors, PWYW offers further disintermediation of traditional business processes beyond inventory and distribution; here, the costly process of price adjustment is also avoided [Bergen et al., 2005]. In 2007, the rock band Radiohead made their new album “In Rainbows” available on its website as a digital download in an effort to avoid deals with traditional recording companies and distribution partners. The band adopted a PWYW pricing policy for downloaders, allowing fans to pay any amount they chose for the album, including nothing. While the total number of downloads and the total amount of revenue earned were not verified, the consumer research company comScore stated that the average payment for the album was \$2.26 [Hardesty, 2008]. Other music groups have since adopted the PWYW pricing strategy with varying degrees of success. Other products sold online using PWYW include the video game “World of Goo,” which sold for an average of \$2.03 [Dybwad, 2009]. As more companies decide to market their products and services directly to consumers online, the PWYW strategy may become a more common pricing mechanism, assuming a number of customers will opt to pay a sufficient amount to make the product profitable [Hinz et al., 2011].

That leads to a reasonable follow-up question: Why would a buyer choose to pay more than zero for a product if he or she does not have to? Some research indicates that buyers tend to favor paying nothing for a product, even against the choice of purchasing an even more valuable product for just one penny [Shampanier et al., 2007]. Likewise, there is also evidence of individuals partaking in the free use of online information services that are costly for vendors to provide [Wu et al., 2004]. However, other pricing research suggests that consumers do not automatically choose a free price for a product, especially when conducting the transaction in a market strongly influenced by social exchange [Heyman and Ariely, 2004]. The purpose of this exploratory study is to help identify factors that influence the amount an individual is willing to pay under a PWYW pricing strategy in the online marketplace. Like the aforementioned music and video game products, this study is based on a digital product, a mobile smartphone application (hereinafter called “iProduct”), with a PWYW pricing strategy. This study is informed by both the dynamic pricing studies from marketing and by research in e-Commerce, which we review below.

II. RESEARCH MODEL AND HYPOTHESES

Many of the factors found in the research model for this study are based on the general principles put forth by Social Exchange Theory (SET). While several different perspectives of social exchange have been articulated (for a review see Cropanzano and Mitchell, 2005), most views of SET center on the relationship that is established and nurtured between mutually beneficial partners. Because the current study focuses on the relationship between buyers and

sellers in a participative pricing environment, both the economic and social exchanges in which the two parties engage must be mutually beneficial for the long-term survival of the relationship.

We believe that SET, and especially the view that social and economic exchanges coincide with each other, is pertinent to PWYW because, as Blau [1964] states, social exchange “involves the principle that one person does another a favor, and while there is a general expectation of some future return, its exact nature is definitely not stipulated in advance” (p. 93). In the current context, the product or service being offered is expected to be rewarded with a monetary return, but in a PWYW setting, the nature of the return is not specified in advance. In fact, the risk assumed by a vendor offering a product using PWYW is that customers will not provide any economic incentive to continue offering the product. This assumption of risk is supported by SET, as Blau [1964] suggests that the party making the initial offer (here, the vendor’s offer of a product for a buyer-set price) takes the risk of the offer not being reciprocated and thus, the offer to enter a sustained relationship. In truth, customers have little incentive to pay more than zero for the product if they do not seek a repeat transaction with the vendor. Thus, an economic view of SET suggests vendors hope that customers will be utilitarian, valuing what has benefited them in the past while also anticipating future benefits [Cook and Rice, 2003]. SET also describes how individuals value social exchanges based on how frequently or recently the rewards are incurred [Hui et al., 2007]. That suggests that, in addition to economic motivations, a customer who seeks to repeatedly gain the benefits derived from the relationship will be socially motivated to provide economic incentive to the vendor. As Gneezy and colleagues [2010] suggest, a PWYW purchase with a price greater than zero is, at the least, a weak signal that the seller is promoting a product or service that the buyer wishes to be continually available. Therefore, the research model below includes both social and economic factors as influences on a buyer in a PWYW setting.

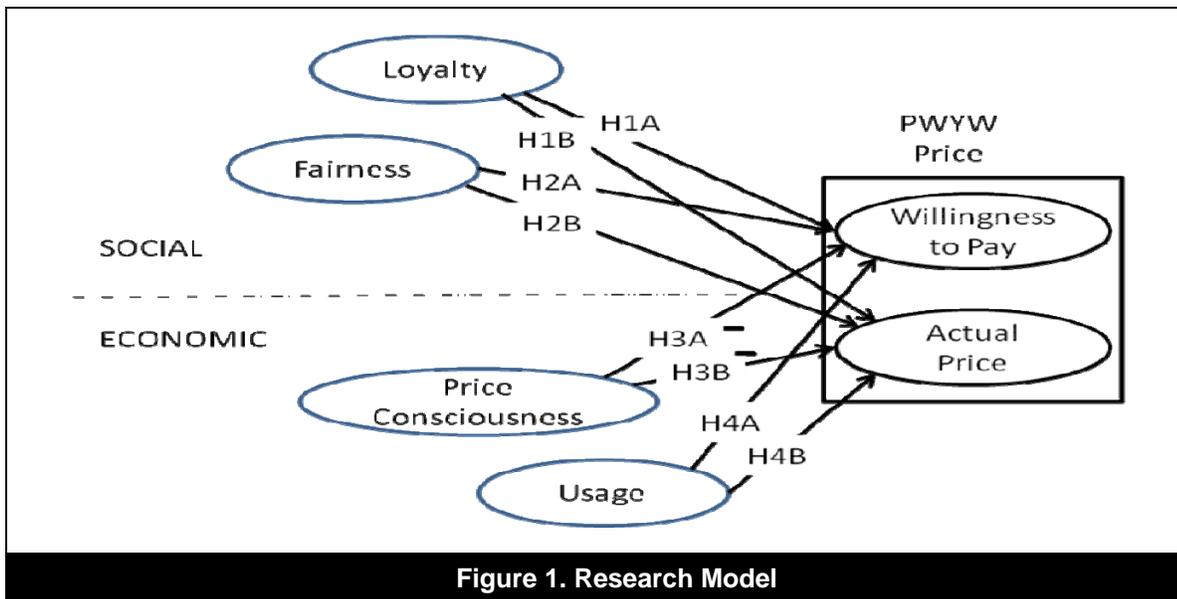


Figure 1. Research Model

PWYW: Willingness to Pay and Actual Price

To begin elaborating on the research model used in this study, we first turn our attention to the dependent variable, the “PWYW price.” As discussed earlier, the PWYW pricing mechanism allows buyers to set the price they wish to pay for a product with no required minimum. Another difference between PWYW and other participative pricing mechanisms is that the seller cannot reject the buyer’s set price [Spann and Tellis, 2006]. The amount of money exchanged is thus determined by the buyer’s *willingness to pay*, a concept that is well-established in the economics and marketing literature. The amount represents the monetary value that a potential buyer places on a product or service. Willingness to pay can be broadly defined as the maximum amount that a buyer is willing to pay for a product or service [Homburg et al., 2005; Miller et al., 2011]. Recently, willingness to pay has been examined in contexts such as determining the drivers of the purchase of national brands vs. private labels [Steenkamp et al., 2010]; online auction bidding competition [Chan et al., 2007]; and whether satisfied customers are willing to pay more [Homburg et al., 2005]. In this study, we operationalize the PWYW price using two different measures, the price the buyer states he or she is willing to pay for a product, and the price that the buyer actually pays for the product.

We expect that the two measures of PWYW price; the hypothetical willingness to pay and the actual amount paid, reflect two conceptually distinct measures (for a discussion of willingness to pay measurement, see Miller et al., 2011). In this study, the hypothetical willingness to pay represents the maximum amount an individual would *intend*

to pay and the PWYW value represents the *actual* amount paid. The use of these two measures is similar to much research on technology acceptance and system usage, in that we use a subjective “intention to use” measure as well as a separate and distinct “actual use” measure. Where the latter provides a lean, more objective measure of system usage, the former reflects a subjective measure that could be misstated (or even misrepresented) by a desire to provide a socially-approved response [Barnett et al., 2006, Burton-Jones and Straub, 2006]. Here, the buyer’s stated willingness to pay could well be swayed by social approval. Indeed, previous research has shown that, when confronted with a socially desirable purchasing decision (such as when being asked to pay a premium for fair-trade goods [De Pelsmacker et al., 2005]), respondents will state that they are willing to pay more than they normally would. An “attitude-behavior gap” has been noted in the consumer research literature, a gap in which a significant number of buyers have no trouble expressing opinions that conform to socially-approved purchasing decisions but fail to follow through with those decisions out of convenience, a low importance placed on fairness and ethics, and price consciousness [Boulstridge and Carrigan, 2000; Carrigan and Attalla, 2001].

The social exchange literature may also help distinguish between willingness to pay and making an actual payment. SET views willingness to pay as representing the agreement for an equitable payment from a buyer who receives a sufficient level of satisfaction to the seller who provided the product [Homburg et al., 2005]. As Adams [1965] suggests, when benefits from the product exchange fail to materialize or fall short of expectations, inequities in the actual payment will occur, with the dissatisfied buyer “altering his inputs” (i.e., the payment). Thus, viewed from an SET perspective, willingness to pay represents a stated agreement to pay a certain amount for a product, and the actual payment represents the buyer fulfilling that agreement. In a PWYW context, the difference is that there is no set price for the buyer to agree upon, and the buyer can base his or her willingness to pay on the social exchange factors displayed by the model instead of being bound to the seller’s preordained price and expectations of satisfaction.

SET: Social Factors

The first two hypotheses are developed by a literature review of the influence of social factors—loyalty and fairness—in PWYW marketplaces. The first factor is the buyer’s loyalty to the seller or vendor of the product. Here, loyalty refers to “customer behaviors indicating allegiance to and promotion of the organization’s interests beyond individual interests” [Bettencourt, 1997]. Loyalty is regarded by SET as a principal component for sustaining long-term social relations for mutual benefit [Xu et al., 2009]. The affect view of SET proposes that loyalty can be applied to social exchanges between peers and between firms and customers, increasing the shared jointness between the two parties [Lawler, 2001]. According to previous PWYW research, loyal customers can be expected to pay higher prices than others because they have a desire to see the vendor survive and because they hope to avoid any potential embarrassment during future transactions after paying a low price [Kim et al., 2009]. Loyal customers of a business are also likely to recommend the business to others. Customers who associate themselves with a business by virtue of making a personal recommendation is a reliable predictor of one’s continued loyalty and purchasing intention with that business [Keiningham et al., 2007]. All told, loyal customers have a personal investment with a seller that could be expected to influence them to pay more than others in a PWYW pricing environment.

Online consumers are known to show loyalty to particular websites, and we can expect that loyal customers are as likely to pay more for a product in an online PWYW situation, as has been observed in the traditional marketplace. Loyal customers have been observed paying a higher price for similar products, are more understanding of the vendor when something goes wrong, and are more satisfied with the vendor–customer relationship because the vendor understands their expectations [Gefen, 2002; Lam et al., 2004]. Also, loyal customers of a website commonly recommend the site to friends and family, much like the traditional marketplace [Reichheld and Scheffer, 2000]. Finally, a customer’s loyalty to a website has been discussed as being an indication that the relationship with the vendor has entered a stage of continuance, a stage in which prolonging the relationship is a higher priority than the anticipation of rewards [Campbell et al., 2009]. All this suggests that loyal customers have a stake in the vendor’s survival. For those reasons, we believe loyal customers will pay more for a product in a PWYW setting.

H1A: Loyalty to the seller will positively influence the PWYW price a buyer is willing to pay.

H1B: Loyalty to the seller will positively influence the buyer’s actual price paid.

Next, we expect that the buyer will consider the fairness of the transaction when deciding on a price. SET considers perceptions of fairness to be the eventual arbiter of proper exchange rates [Blau, 1964]. Kim and colleagues [2009] propose that, in a PWYW process, when a customer believes that the value of his or her inputs is equitable with those provided by a seller, transactional fairness is achieved. However, should the customer perceive that his or her inputs are proportionally higher, the customer will believe the transaction is unfair and will react in a way to either gain a balance with the seller or abort the transaction altogether. This perception of unfairness can occur when the buyer observes that he or she has paid a different price for the same product than other customers [Haws and Bearden, 2006]. A belief that one has been unfairly treated in a transaction usually results in the buyer responding

negatively toward the desired product itself, to the point that the perceived value of the product diminishes in the mind of the buyer [Xia et al., 2004]. Given the lack of a threshold price in PWYW to pay for a product, it seems possible that buyers will consider paying anything over zero for a product “unfair” when comparing themselves to other customers.

That said, consumers may offer what they deem to be a fair price for a product for several reasons. First, transaction utility theory suggests that buyers and sellers will tend to reward each other in ways to maintain a fair balance in order to avoid the distress of an unfair transaction [Kim et al., 2009]. Also, in a recent study of dynamic pricing, Rese and colleagues [2009] predicted that an individual's anticipated cognitive dissonance would affect his or her willingness to pay in a PWYW environment. Specifically, they predicted that customers would consider a low offer to violate social norms against “free riding,” and that customers would instead conform to societal expectations of fairness and otherwise avoid the displeasing cognitive dissonance. Similarly, others have speculated that buyers gravitate to online PWYW marketplaces to avoid experiencing guilt from paying nothing for a desired product, as is common in peer-to-peer file sharing [Regner and Barria, 2009]. Lastly, a buyer may be more satisfied with the purchase if he or she believes that his or her end of the transaction was handled fairly. Recent research on online auctions demonstrates the importance of pricing fairness on a consumer's satisfaction with a transaction [Ho et al., 2009]. Thus, we believe that a buyer's perceptions of fairness in the transaction will influence the amount he or she will pay.

H2A: Perceived fairness positively influence the PWYW price a buyer is willing to pay.

H2B: Perceived fairness to the seller will positively influence the buyer's actual price paid.

SET: Economic Factors

The remaining two factors reflect the economic influences suggested by SET. One factor that may have a negative influence on the buyer's PWYW price is price consciousness. By price consciousness, we refer to “the degree to which the consumer focuses exclusively on paying low prices” [Lichtenstein et al., 1993, p. 235]. Price consciousness can exist either differentially across product categories or become an enduring attitude across multiple product categories [Sinha and Batra, 1999]. By definition, highly price conscious buyers use the price of a product as a negative influence within the decision to make a purchase and are thus expected to be less willing to pay a premium for a product [Lichtenstein et al., 1988]. Buyers who are high in price consciousness attempt to enhance savings by searching for discounts and readily accept price savings [Kim et al., 2009]. Price conscious consumers show no more preference for shopping online than they do for the traditional marketplace [Girard et al., 2003]; their goal to maximize savings exists in both arenas. In terms of social exchange, consumers who are primarily attracted to a vendor because of price savings are not expected to reward the vendor with a mutually-beneficial economic relationship. In fact, the likelihood of a vendor receiving reciprocal benefits from a price conscious customer is considered to be “an uphill battle” [Arnold et al., 2009].

Online shoppers have abundant opportunity to compare prices between similar products and services. One of the touted advantages of eCommerce is the lower costs resulting from the relative ease of conducting searches for favorable prices than is found in the traditional marketplace, although evidence suggests that many online consumers do not always take advantage of the ease of these searches [Zwick et al., 2003]. As a result, websites like Yahoo and Google aggregate information for consumers by providing an overview of prices offered by a number of online vendors on a single webpage. For this reason, we believe that price consciousness will factor into an online buyer's participative pricing. Additionally, because he or she will attempt to maximize savings, it will have a negative influence on the price paid.

H3A: Price consciousness will negatively influence the PWYW price a buyer is willing to pay.

H3B: Price consciousness to the seller will negatively influence the buyer's actual price paid.

Finally, we believe that the extent of the prior usage of the product will also sway the price the buyer is willing to pay (and will actually pay) for the product during future transactions. Following a utilitarian perspective of social exchange, individuals act in accordance with the benefits they expect to accrue from future transactions, choosing a course of action that will maximize those benefits [Cook and Rice, 2003]. A buyer's willingness to pay, in fact, is composed of the value he or she assigns to prior personal consumption or usage experience with a product [Homburg et al., 2005]. The expectations for future benefits requires that buyers reflect on the benefits gained from the product in the past, if applicable, which follows from reinforcement psychology [Emerson, 1976]. An expectation of similar usage performance in the future follows from social exchange theory, especially if the buyer values the vendor's role in continuing to support the product. Indeed, successful social exchange stems from a prolonged balance between buyer and seller, rather than from the benefits gained from a one-time transaction [Hemetsberger, 2002]. For a consumer faced with a PWYW pricing mechanism for a product he or she has benefitted from in the past, one would expect that he or she would choose to increase the chances for future benefits by rewarding the

vendor with a higher price. Thus, we believe that a buyer who has benefited from past usage will be motivated to pay a larger PWYW price in anticipation of future benefits.

H4A: A buyer's prior usage of the product will positively influence the PWYW price a buyer is willing to pay.

H4B: A buyer's prior usage of the product will positively influence the buyer's actual price paid.

III. METHODS

Marketplace

In order to empirically test the research model and its associated hypotheses, we conducted a survey related to a product developed and made available on the iTunes App Store by one of the researchers. The iTunes App Store provides both a global storefront to reach interested customers and the capabilities needed to operationalize the factors in the research model. There are over 500,000 applications for mobile devices available on the iTunes App Store at an average price of \$2.09 (US). Twenty-six percent of the applications are available for free. In terms of the number of people potentially interested in iProduct, there are over 134,000 app developers who have successfully submitted finished products for sale on the iTunes Application Store, in addition to an unknown number of developers who are currently working on applications.¹

The iTunes App Store provides a common storefront for app vendors, complete with searching capabilities using keywords and pre-established product categories. The price conscious customer is able to browse a category of existing apps and to examine the prices for similar products, which are compiled in a similar manner as Yahoo and Google. Apps are also listed for each developer, allowing loyal customers to browse a specific developer's new and previously-available apps. At the time of the study, the developer of iProduct had twelve other apps available on his storefront, three of which had been downloaded over three thousand times.

The Product and Transactions

The product used for this study, iProduct, is an application for the iPhone and the iPod Touch and was made available on Apple's iTunes App Store. iProduct is composed of a series of lessons, tutorials, and code marketed for aspiring app developers. Each lesson/tutorial was bundled into its own separate "project," which served as the unit of sale for this study. Each project teaches some aspect of iPhone programming. The project is delivered to the buyer both within the iProduct app itself and via e-mail; each project consists of a pdf file that typically contains between eight and ten pages of step-by-step instructions and an explanation of how to accomplish some particular programming task. The projects are educational in that they attempt to teach programming concepts, not simply telling the customer how to perform the immediate job at hand. A working program demonstrating the programming concept is included in each project and is delivered to the user in a single compressed file via e-mail.

The iTunes App Store provided an ideal marketplace to measure and test the hypotheses put forth in this study. Recent upgrades to the app development kit offers application sellers the ability to offer In-App Purchases, a feature which allowed our vendor the necessary control over pricing. With In-App Purchases, a vendor can create a virtual storefront within an iPhone application and then sell digital products to users from within the application. Each individual project could thus be priced individually and differently. To sell an item from that storefront, the application passes information to the standard iTunes App Store, which processes the transaction. Apple is then responsible for billing, collecting payment from the user, and for paying the vendor. Finally, the iProduct app itself delivers the digital product to the user.

At the time of the survey (spring 2010), iProduct featured a total of twenty projects available for downloading. The base iProduct application provided initial projects dealing with concepts like receiving a development certificate and uploading finished applications to the iTunes Application Store. Other free initial projects explained basic functionality that would be common in an introductory app, such as GUI design, and user input/output (one initial, free project, for instance, explains how to create a temperature converter app). Buyers could then pay for and download advanced projects if they so desired. Advanced projects instructed buyers on specific Objective-C programming concepts that are helpful for application development. The iTunes App Store requires vendors to specify a price for each product, including In-App Purchases like the iProduct projects. Additionally, and rather unique in iProduct, an in-application gratuity mechanism was provided for buyers to donate a variable amount (i.e. an amount greater than zero) to the vendor if they wished. The gratuity mechanism was conveniently positioned next to the projects on the iProduct interface, and a help file further explained its use. Although there was no requirement for a customer to download a project before utilizing the gratuity mechanism (in effect paying for nothing), that did not occur.

¹ App Store statistics provided by the website 148apps.biz at <http://148apps.biz/app-store-metrics/> (current February 3, 2012).

Measures

The scales used to measure the variables for the first two hypotheses, loyalty and perceived fairness, were appropriated from an earlier PWYW study [Kim et al., 2009] and modified to fit the context of the online marketplace and the iProduct product. Price consciousness had also been measured in the Kim et al. [2009] study, but we modified the items to better reflect the price comparisons users can make in the iTunes App Store. Usage was measured by retrieving the number of accesses to the application server made by each customer prior to the survey. Although an objective measure of usage is considered relatively lean by nature, a usage metric using server accesses prevents misinterpretations that are often found in self-reported usage [Burton-Jones and Straub, 2006]. Also, because the tasks iProduct can be used for are numerous and varied, the survey could not refer to just one specific task being completed by users. However, server access numbers do indicate that users were completing a task of some sort. All items can be found in the instrument provided in the Appendix. The scales for all items ranged from 1 (strongly disagree) to 7 (strongly agree).

The PWYW price reported by the survey respondents was measured in two ways. First, the respondents were directly asked about the price they would be willing to pay for an additional iProduct project on the survey (hereafter referred to as “willingness to pay”). The item used to measure willingness to pay asked downloaders, “What is the price you would be willing to pay for a comparable application, project, or tutorial?” A second measure collected the actual price they did pay for projects (referred to as the “actual price”) from the seller’s iTunes account and sales reports. The actual price was calculated by dividing the total amount the buyer had paid for iProduct projects by the total number of projects downloaded. Because the iTunes storefront is global in scope, buyers originated in many different countries, and all prices paid for products were converted into US currency.

Data Analysis

Invitations to complete the survey were sent via e-mail to individuals who had downloaded an iProduct project in the past, and the survey was made available for those wishing to participate with their mobile devices. At the time of the survey, 654 individuals had downloaded a total of 1254 iProduct projects. Unfortunately, not all of the e-mail addresses supplied by downloaders were valid, so many invitations to participate in the survey were not received. We collected fifty-six completely usable surveys, which was a response rate of at least 8.5 percent. The average age of the respondents was thirty-one years, and 90 percent of the respondents were male. In an effort to assess response bias, we compared the average number of downloaded projects for respondents (3.93) with those for non-respondents (3.14). We also compared the average number of server accesses for respondents (6.66) with those for non-respondents (5.78). T-test comparisons suggested that the differences between the two groups were not statistically significant in either case, providing evidence that the group of respondents were representative of the iProduct consumer base for the number of transactions and for usage.

Before conducting the data analysis, we performed a confirmatory factor analysis on the items and measures in the research model. One item was dropped from the loyalty measure and from the price consciousness measure, respectively, due to their low item-to-factor correlations. The items remaining loaded onto their intended constructs beyond the recommended tolerance of .70. We then assessed the constructs for reliability and validity. Reliabilities were assessed of the four constructs using Cronbach’s alpha [Nunnally, 1978], which is provided in the Appendix. Finally, we determined that the constructs demonstrated sufficient discriminant validity by calculating the Average Variance Extracted and comparing its square root with the inter-construct correlation for each construct. Because the square roots of the AVE exceeded the related correlations, the requirement for discriminant validity was satisfied [Fornell and Larcker, 1981]. The correlations between constructs and the associated AVE values are displayed in Table 1 below.

Table 1: Inter-construct Correlation Matrix

	Mean (SD)	Loyalty	Perc. Fairness	Price Consc.	Usage	Will. to Pav	Act Price
Loyalty	4.59 (1.3)	.85					
Perc. Fairness	4.63 (1.6)	.40	.88				
Price Consc	4.61 (1.6)	-.02	-.24	.90			
Usage	5.66 (7.4)	.04	.27	-.30	—		
Willingness to Pay	\$0.43 (0.72)	.34	.32	-.20	.16	—	
Actual Price	\$0.04 (0.11)	.22	.30	-.31	.33	.37	—
Square roots of AVE values displayed in diagonal.							

We analyzed the research model using structural equation modeling through M-PLUS Version 5.21 [Muthén and Muthén, 2009]. M-PLUS allows for maximum likelihood parameter estimation with non-normal continuous variables, as with the PWYW dependent variables used in the research model. The model was analyzed separately for both of

the PWYW dependent variables (see Figure 2 below). The model showed appropriate fit for both willingness to pay (Chi-square = 21.76, $p < .05$; CFI = 0.98; RMSEA = 0.05) and the “actual price” (Chi-square = 27.39, $p < .05$; CFI = 0.95; RMSEA = 0.08) [Brown, 2006].

The results suggest that three of the four hypothesized factors significantly influenced at least one of the PWYW dependent variables. One social factor, loyalty to the vendor, positively influenced the willingness to pay ($\beta = 0.31$, $t = 1.98$), supporting H1A. It is worth noting that the mean willingness to pay for a downloaded project was 43 cents. Both of the economic factors, price consciousness and usage, were found to be significant influences on the “actual price.” As predicted, price consciousness was a negative influence ($\beta = -0.34$, $t = -2.09$), while usage positively influenced the price that was actually paid ($\beta = 0.31$, $t = 1.97$). For the sake of comparison, the mean “actual price” for a project was 3.6 cents. If one regards the “actual price” as the sole practical outcome in the research model, then only Hypotheses 3B and 4B were supported by the data.

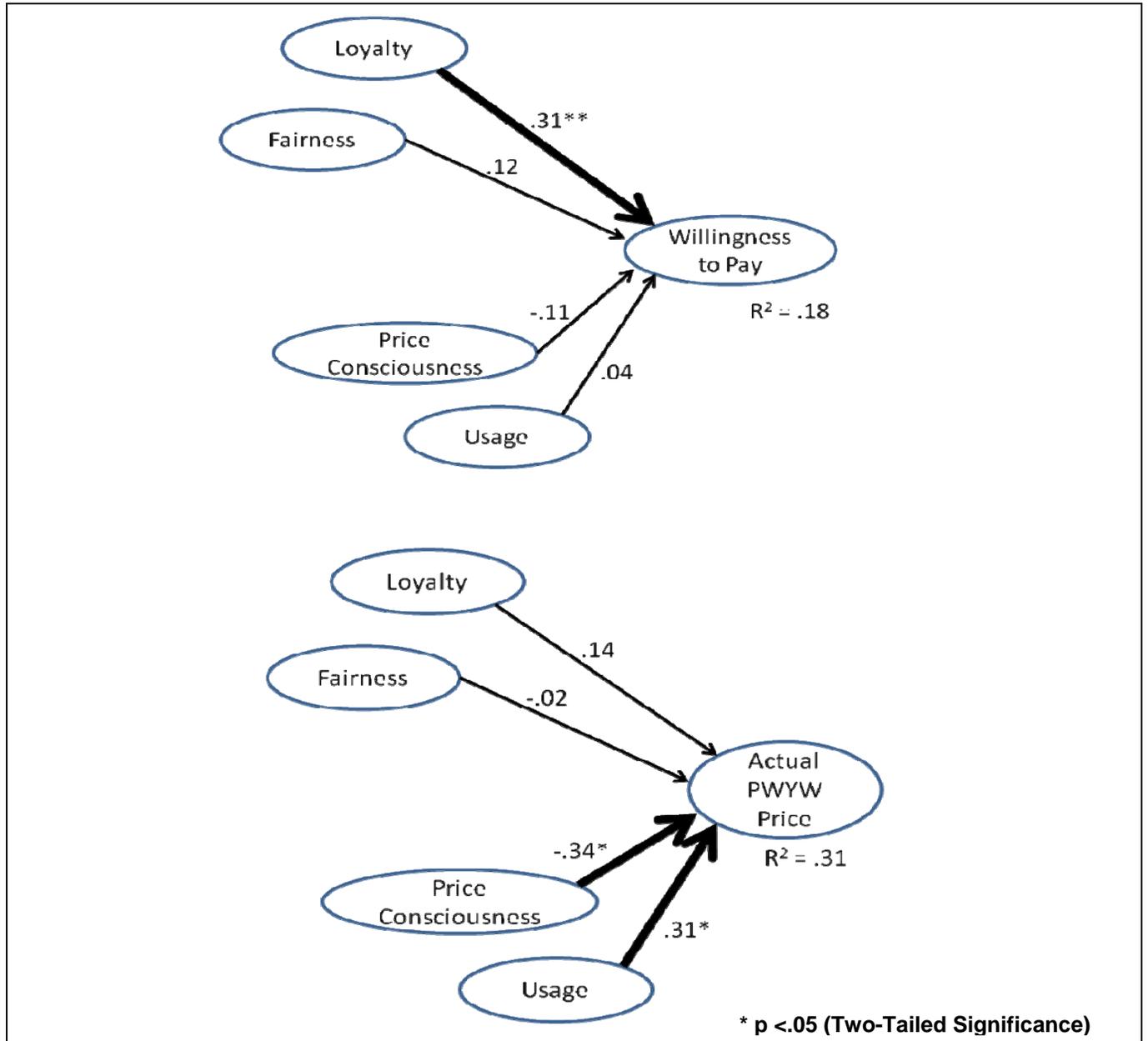


Figure 2. Results of SEM Data Analysis (Standardized Path Coefficients Shown)

IV. DISCUSSION AND CONTRIBUTIONS

The main purpose of this study was to add to our understanding of why consumers will pay or will not pay for products in a PWYW setting. Given that the nature of the online marketplace and its inherent ability to support transactions of this type, we believe that the results help shed light on factors lead these transactions to be

successful or not. Clearly, an exploratory study of this type should be replicated and broadened to include other products that are available online. However, this study does provide evidence that future studies in this area should carefully consider the variable “PWYW price.” The use of two different PWYW variables indicates a distinct difference between the socially desirable willingness to pay and the actual amount paid using this mechanism. The results suggest that the social factors accounted for in the research model were more influential toward the socially approved willingness to pay, and the economic factors were more influential toward the actual price paid, which parallels the “attitude-behavior gap” observed in many consumer purchasing decisions [Boulstridge and Carrigan, 2000]. Again, a pragmatic view of the research would attend only to the “actual price” dependent variable. The hope for vendors would be to strike a social chord with customers and to improve the chances for receiving actual payments closer to the willingness-to-pay amount.

Online vendors should be especially cognizant of the social influences (or the lack thereof) on a PWYW transaction. Because online vendors are necessarily “out of sight” from the buyer, they also may be “out of mind” when the opportunity for monetary exchange occurs [Gautier and van der Klauw, 2011]. Online vendors who depend on the loyalty and perceptions of fairness of their customers may be due for disappointment. A music group like Radiohead, which has developed a loyal fanbase over the years, could be the rare vendor that can count on actual payments making a PWYW venture worthwhile. Other groups may have fans that promise to reward them out of loyalty, but in terms of actual monetary exchange, the results here suggest that economic factors are more likely to be influential. Otherwise, the anonymity and reduced social presence that exists between the buyer and an online vendor could prevent social factors like loyalty and perceived fairness from being established in long-term B2C relationships [Gefen and Straub, 2003].

As for the current study, the developer of iProduct would not likely survive long solely on PWYW income. Eighty percent of the survey respondents chose not to pay anything for additional iProduct projects. That said, some buyers did exhibit loyalty and fairness toward the developer. One buyer paid an average of \$1.22 (US) for each additional project, counting gratuities. A follow-up e-mail from the buyer, which indicates both an appreciation of the effort devoted to the product development and a desire to continue the customer-vendor relationship, provides some insight here:

Thought I'd send an e-mail thanking you for your time and effort to bring us one of the best tutorial apps that I've come across on the App Store. Nothing else comes close to how much I've learned. Please, keep up the great work.

Hypotheses (H2A and H2B), testing the influence of perceived fairness on PWYW pricing, were not supported. A reasonable understanding of variable costs necessary for developing a product could explain a customer's feelings of fairness [Kim et al., 2009]. Should a buyer have a misconception of the money, time, effort, and materials invested in a product, his or her idea of fair compensation could either be too high or too low. Because iProduct and its projects were digital in nature, the time needed to develop a project was the largest cost to the developer. To investigate this, we included an item designed to elicit the downloader's perceptions of the time invested in development (“How many hours do you think it took the developer to create a typical iProduct project?”). Downloaders believed, on average, a project took 11.2 hours to develop. The developer estimated that projects took around twelve hours to develop from start to finish, so downloaders had a reasonable estimate of the costs involved. However, the perceived hours to develop a project were not significantly correlated with willingness to pay ($r = .24$, $p = .07$), and certainly not with “actual price,” so it appears that providing a fair transaction simply did not inform the amount buyers actually paid. One possible explanation is that buyers do not feel a sufficient level of social presence in online transactions, and buyers are able to provide unequal payments without fear of social disapproval. This speculation is supported by comparing results with Lynn [1990], who concluded that buyers often engage in impression management in face-to-face transactions, paying more than is required for a product in order to avoid “appearing cheap.” Our results suggest that the fear of appearing cheap may not be as influential in an online marketplace. In a restricted medium like the Internet, impression management (and, as a result, fairness) suffers from the reduced social presence between parties.

As predicted, the hypothesized economic factors did influence the actual price paid by downloaders. As with many online retailers, the iTunes marketplace makes the prices of its available products easy to view, so the price-conscious shopper should have no trouble comparing across similar products if so desired. The PWYW pricing mechanism may offer a valid strategy for vendors seeking at least a minimal profit. With so many products available to download for free on the iTunes App Store (or on peer-to-peer networks), it may be difficult for vendors to “compete with free” with conventional fixed-pricing [Bockstedt et al., 2006].

Again, as the current study is exploratory in nature, additional research should be conducted to gain a better understanding of the underlying exchange factors in online transactions. In terms of its contributions to research, the

current study extends Social Exchange Theory into the area of online participative pricing. Despite the limitations discussed below, the results show a clear difference between social and economic factors in terms of what buyers promise to pay and what they actually do pay. The results complement earlier research in PWYW and participative pricing that suggests the buyer's control over the price ultimately overrides other factors, including social factors and evaluations of the product itself [Chandran and Morwitz, 2005; Haws and Bearden, 2006].

Limitations

There are several limitations to the study that should be taken into consideration when assessing the results. First, the small sample size reduced the statistical power needed to properly assess the model. This being an exploratory study, as well as a first attempt to examine factors influencing a PWYW transaction in an online marketplace, the results of this study will serve to inform future research in the area. However, confirmatory studies using a larger sample size are needed. This study involved one digital product available exclusively in one online marketplace. While we can perpetually keep the survey open and available to anyone downloading iProduct in the future, the amount of time required to accumulate a larger number of responses would eventually threaten internal validity.

Another limitation is that the parsimony of the research model likely does not include other influential factors. Trust is a variable that is frequently incorporated in social exchange models, especially those involving transactions between equal partners, as in B2B ecommerce [Luo, 2002]. We did not include it in the current study because the risk in a PWYW setting is mostly assumed by the vendor. As Kim and colleagues [2009] point out about PWYW transactions, "The obvious risk is that customers could exploit their control and pay nothing at all or a price well below the seller's cost. In such a situation, the seller would not survive for long" (p. 45). Having witnessed PWYW transactions firsthand, we are obliged to agree. However, it should be acknowledged that buyers in online marketplaces do place importance on an assurance that their personal information will be kept private by the seller [Adam et al., 2007], so trust in the vendor could be an issue if the buyer feels uncertain within the online environment [Chatterjee and Datta, 2008], even in a PWYW setting, and thus should be considered in future PWYW research. Other variables that could be explored in future research are based on the product itself, such as satisfaction [Kim et al., 2009], or factors influencing a consumer's attitude toward e-commerce transactions, such as facilitating conditions [Bhattacharjee, 2000]. Finally, future research should also investigate these factors with products outside of the programming environment. This would also likely encourage a more diverse pool of respondents.

Conclusion

While the online marketplace seems to be a natural arena for conducting participative pricing mechanisms like PWYW, one must wonder if online shoppers are willing to make the effort worthwhile for vendors. Recent research suggests that if online shoppers are made aware of a PWYW policy, customer satisfaction with the purchase increases and sellers can realize a profit [Hinz et al., 2011]. The results of this exploratory study go a step further by suggesting customer attitudes about social exchange are also important. While the economic factors of SET appear to be important for general customers, to increase the chances for the venture to be profitable, we believe that social factors, like loyalty and fairness, should be strong and firmly in place within the customer base in order to realize the full potential a PWYW pricing model.

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APPENDIX A: INSTRUMENT

Table A–1: Instrument

Item	Loading
Loyalty (Cronbach's $\alpha = .89$)	
I have downloaded applications from this developer before.	dropped
I say positive things about this application developer to others.	.83
I encourage friends and relatives to download from this application developer.	.93
I make an effort to seek out this application developer whenever I want a new application.	.80
Perceived Fairness (Cronbach's $\alpha = .87$)	
The prices that I have paid for iProduct projects and tutorials are fair toward its developer.	.86
The prices that I have paid for iProduct projects and tutorials adequately reward its developer for his work.	.91
Price Consciousness (Cronbach's $\alpha = .71$)	
Before I purchase an application, I often check the prices of other similar applications.	dropped
I usually download applications that are free.	.94
I usually purchase applications that are less expensive than other similar applications.	.86

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