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Charity auctions from an economic perspective — literature review

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Abstract: One of the most common means of raising funds is the charity auction. At charity auctions, money is collected for a good cause, and the products are purchased for private consumption — the bidders may achieve both public and private gains. The charitable nature of this type of auction makes them different from standard auctions. The paper aims to present the main characteristics of this fundraising strategy as well as make a comparison with other formats of raising money for a good cause, i.a. lotteries. Furthermore, the main differences between charity and non-charity auctions will be explained. The studies do not clearly demonstrate whether the charity auction is a more effective mechanism of raising funds than the lottery. However, there is evidence that both formats outperform voluntary contributions. From the perspective of charity organizations, the most effective charity auction format seems to be the all-pay auction. The studies have also revealed that revenues at charity auctions are higher than at standard auctions.

Aukcje charytatywne z perspektywy ekonomicznej — przegląd literatury

Abstrakt: Jednym z najczęstszych sposobów pozyskiwania funduszy na cele charytatywne są aukcje charytatywne. Podczas aukcji charytatywnych środki pieniężne zbierane są w słusznej sprawie, a produkty kupowane do konsumpcji prywatnej — licytujący mogą tym samym osiągnąć korzyści zarówno publiczne, jak i osobiste. Charytatywny charakter tego rodzaju aukcji odróżnia je od aukcji non profit. Niniejszy artykuł ma na celu ukazanie głównych cech tej strategii zbierania funduszy, a także porównanie jej z innymi formami zbierania środków na szczytny cel, na przykład z loteriami. Ponadto wyjaśnione zostaną główne różnice między standardowymi aukcjami

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i aukcjami dla organizacji non profit. Wyniki badań nie wskazują jednoznacznie, czy aukcja charytatywna jest bardziej skutecznym mechanizmem pozyskiwania funduszy niż loteria. Istnieją jednak dowody na to, że oba formaty przewyższają dobrowolne składki. Z punktu widzenia organizacji charytatywnych najskuteczniejszym formatem aukcji charytatywnej wydaje się aukcja „wszyscy płacą". Badania wykazały również, że przychody na aukcjach charytatywnych są wyższe niż na aukcjach standardowych.

Introduction

Charitable giving is a valid part of public economics. Therefore, the charitable sector may be perceived as a market. According to the tenth edition of the *CAF World Giving Index*, the USA has been the most generous country in the world over the last ten years[1] (scoring 58%) ahead of Myanmar and New Zealand in the second and third place. *CAF World Giving Index* comprises of three dimensions — helping a stranger, donating money, and volunteering time. Focusing on the money donation only, the highest percentage of the population donating money for charity[2] has been in the following countries: Myanmar (81%), United Kingdom (71%), Malta (71%), Thailand (71%), Netherlands (71%). The report also states that the tendency to donate money increases with age — during the last decade people aged over 50 were most likely to donate money for charity.[3] The USA — as a global leader in charity — year by year raises more money for a good cause. Figure 1 illustrates the amount of money given for charity in the USA from 2012 to 2018. According to *The Annual Report on Philanthropy in America* by Giving USA the annual volume of funds allocated to charitable purposes increased by over 100 billion in the period of analysis.[4]

Charities use a whole range of mechanisms to raise money for the public good. Substantial channels include: grants from the government, gifts from foundations, individual donations. Charities also raise funds through mailings, phone banks, and advertising as well as through fundraising events, for instance charity auc-

[1] The report aggregates data from the studies conducted between 2009 and 2018.

[2] The respondents were asked if they donated money to a charity in the last month (i.e. one month prior to the interview).

[3] Charities Aid Foundation, *CAF World Giving Index 10th Edition*, 2019, https://www.cafonline.org/about-us/publications/2019-publications/caf-world-giving-index-10th-edition (access: 10.01.2020).

[4] Giving USA Foundation, *Giving USA 2013: The Annual Report on Philanthropy for the Year 2012*, 2013; idem, *Giving USA 2014: The Annual Report on Philanthropy for the Year 2013*, 2014; idem, *Giving USA 2015: The Annual Report on Philanthropy for the Year 2014*, 2015; idem, *Giving USA 2016: The Annual Report on Philanthropy for the Year 2015*, 2016; idem, *Giving USA 2017: The Annual Report on Philanthropy for the Year 2016*, 2017; idem, *Giving USA 2018: The Annual Report on Philanthropy for the Year 2017*, 2018; idem, *Giving USA 2019: The Annual Report on Philanthropy for the Year 2018*, 2019, http://www.givingusa.org/ (access: 10.01.2020).

tions, galas, or walkathons. Due to mutual dependencies, the use and effectiveness of each channel should be examined in relation to the others.[5]

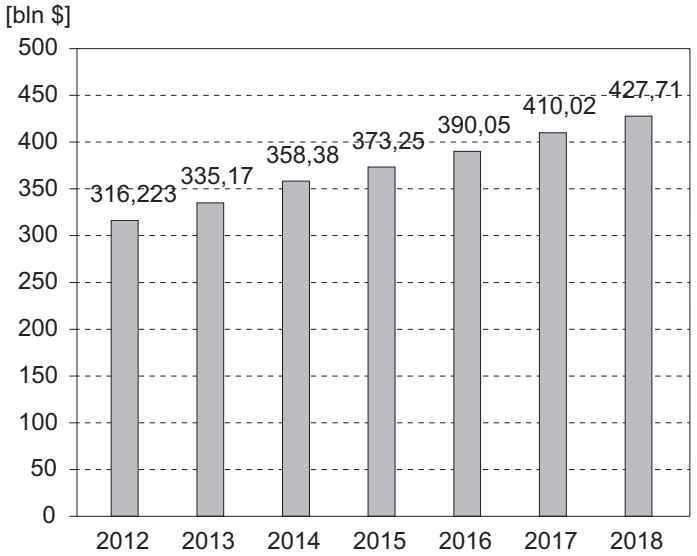

Figure 1. Charitable giving in the USA

Source: own elaboration based on *Giving USA: The Annual Report on Philanthropy for the Year 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019*.

Thus, the charity auction is a popular form of raising money for a charitable cause. The number of Google searches of the phrase "charity auction" and "charity auctions" amounts to around 3.567.000, which suggests that this format may be relevant. Unlike typical auctions where only the winner benefits from sales, in charity auctions the bidders not only aim to win the object, but also want to support a specific cause. It means that the achieved revenue may provide a benefit to all the bidders, no matter who wins the auction — the raised money then constitutes a public good.[6]

There is a wide variety of items that are sold for charity during the auctions. Art charity auctions are a widespread form of fundraising. The most significant art charity auction ever staged took place in 2018 at Christie's — The Collection of Peggy and David Rockefeller was sold for $835.1 million. It is the highest auc-

[5] J. Andreoni, A.A. Payne, "Charitable Giving", [in:] *Handbook of Public Economics*, vol. 5, ed. A.J. Auerbach et al., Amsterdam 2013, pp. 1–50.

[6] M. Engers, B. McManus, "Charity auctions", *International Economic Review* 48, 2007, no. 3, pp. 953–994.

tion total ever for a private collection (for both charity and non-charity auction).[7] Furthermore, watches are very high-valued objects to be auctioned for a good cause. In November 2019, the world's most expensive watch[8] — the Patek Philippe watch — was sold for £24.2 million at a charity auction organized by Christie's in Switzerland. Lucrative items that are auctioned at charity events also include wine or collectibles.[9]

When examining the subject of an auction in terms of economy, it is necessary to provide a brief overview of the most common auction types. These mechanisms are applied to charity auctions as well. The theory distinguishes four main types of auctions: the ascending-bid auction, the descending-bid auction, the first-price sealed-bid auction, and the second-price sealed-bid auction.[10] The ascending-bid auction (which is called the English auction) is what people commonly think of as an auction. In this model, the price of the object increases until there is only one participant left willing to pay the specified amount. The descending-bid auction (Dutch auction) starts with setting a high price for the object, which gradually decreases until someone decides to pay it. The participant who accepts the price is the winner. In the first-price sealed-bid auction the participants submit sealed bids without knowing what bids their competitors are submitting. The winner of the auction is the participant who offered the highest bid (this price is paid by the winner). In the case of the second-price sealed-bid auction (Vickrey auction) the procedure is similar to the first-price sealed-bid auction — the bids are submitted without knowing the bids of the other participants. The person who made the highest bid wins, but the price the winner pays is equal to the secondhighest bid in the auction. Apart from these main categories, other auction schemes are used in specific conditions. In all-pay auctions participants submit their bids, among which the highest one wins. The participants who submitted lower bids, and thus lost the auction, must also pay the offered prices.[11]

The paper focuses especially on the economic perspective of charity auctions, its main aim being to present the fundamental characteristics of this form of raising money for charity that are crucial to making an auction profitable. The comparison of charity and non-charity auctions (regarding prices and other aspects) will be performed as well. The paper also examines the differences between charity auctions, lotteries, and voluntary contributions.

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[7] *Rockefeller sales total $835.1 million — highest ever for a single collection*, https://www.christies.com/features/Rockefeller-sales-final-report-9206-3.aspx (access: 10.01.2020).

[8] The world's record as of January 2020.

[9] *World's most expensive watch sells for £24.2m in charity auction*, https://www.theguardian.com/lifeandstyle/2019/nov/11/worlds-most-expensive-watch-sells-for-242m-in-charity-auction (access: 10.01.2020).

[10] P. Klemperer, *Auctions: Theory and Practice*, New Jersey 2004, p. 11.

[11] P. Kuśmierczyk, *Aukcje i przetargi*, Wrocław 2010, pp. 18–25.

Auctions, lotteries, or voluntary contributions?

Choosing the right fundraising mechanism constitutes a complex problem for charities. Using voluntary contributions to raise money for the public good seems not to be the optimal strategy.[12] This is why charities decide to implement different mechanisms such as auctions or lotteries. Consequently, the effectiveness of charity auctions was verified by numerous studies in comparison with lotteries.

The evidence for greater effectiveness of auctions in raising money for charity was found in the study of Orzen.[13] The study was conducted in a laboratory setting thanks to which the theoretical predictions could have been tested. The author observed that higher revenues had been produced by last-price all-pay auctions than lotteries. However, lotteries turned out to perform better than it was assumed based on theory. Schram and Onderstal[14] examined empirically the first-price winner-pay format and all-pay formats in comparison to lotteries both in charity and non-charity conditions. All-pay charity auctions dominated lotteries in terms of the revenue achieved. In terms of raising money for charity, winner-pay contests also proved to provide higher revenue than lotteries.

Corazzini, Faravelli, and Stanca[15] presented the opposite findings. The authors examined three fundraising mechanisms — the voluntary contribution mechanism (VCM), the lottery (LOT), and the all-pay auction (APA) while conducting a laboratory study. Generally, the contributions for a good cause in all analysed formats have been higher than it was concluded theoretically. It turned out that lotteries dominated all-pay auctions in providing money for the public good (both generally as well as on an individual level). Similar results have been found in relation to financial efficiency. The authors explained it by claiming that lotteries may be more common among bidders and as a consequence the players are more careful with biddings in auctions. Alternatively, in the lotteries the participants are prone to bid even though they are aware that other people may act more competitively. The findings seemed to contradict the theoretical assumptions — it was believed that all-pay contests would provide higher revenue to the public good.

Lotteries turned out to be a more effective mechanism for raising money than charity auctions in the study of Davis, Razzolini, Reilly, and Wilson.[16] Although here lotteries were compared only with the English auctions it turned out that when

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[12] L. Corazzini, M. Faravelli, L. Stanca, "A Prize To Give For: An Experiment on Public Good Funding Mechanisms", *The Economic Journal* 120, 2010, no. 547, pp. 944–967.

[13] H. Orzen, "Fundraising through Competition: Evidence from the Lab", *CeDEx Discussion Paper Series* 2008, no. 11.

[14] A.J.H.C. Schram, S. Onderstal, "Bidding to give: An experimental comparison of auctions for charity", *International Economic Review* 50, 2009, no. 2, pp. 431–457.

[15] L. Corazzini, M. Faravelli, L. Stanca, op. cit.

[16] D.D. Davis et al., "Raising Revenues for Charity: Auctions Versus Lotteries", *Research in Experimental Economics* 11, 2006, no. 6, pp. 47–91.

raising money for a charitable purpose, more money may be collected using lotteries. Additionally, the lotteries performed better than it was assumed theoretically (exceeding static Nash predictions).

All-pay auctions and lotteries have been compared under different conditions in the study of Duffy and Matros.[17] The authors investigated the idea of provisional fixed-price mechanisms in fundraising on the basis of all-pay auctions and lotteries. This way of raising money for the public good is risk-free for potential fundraisers — if the gathered funds are not sufficient to cover the price of the object, all the donations are returned to the participants. In other words, the mechanism is self-financing and creates a public provision if the donated amount of money exceeds the fixed price. The results showed that the provision achieved for a good cause is higher in lotteries than in all-pay auctions. Furthermore, lotteries may be the mechanism raising more money for a good cause compared to auctions (first-price and second-price auctions) in the conditions of high asymmetry with a sufficiently high level of altruism.[18]

To date, little evidence has been found regarding voluntary contributions and charity auctions. More studies examined voluntary contributions and lotteries — the results generally suggest that lotteries generate more money.[19] The corresponding conclusion regarding charity auctions came from the study by Orzen.[20] In the study, different fundraising mechanisms have been investigated, such as first-price all-pay auctions, last-price all-pay auctions, and the variation of the last-pay format where there is no price, as well as voluntary contributions and lotteries. The results from the first period of analysis suggested that an average contribution in first-price auctions is over 50% higher than in the voluntary schemes (nevertheless, there was no difference in public good provision). In the following periods, the differences between voluntary contributions and auction formats were significant in all the cases in favour of charity auctions. Furthermore, the revenues generated by all the analysed formats (including charity auctions) were expected to exceed the voluntary contributions. Furthermore, in the study of Corazzini, Faravelli, and Stanca[21] both all-pay auction and lottery performed better than voluntary con-

[17] J. Duffy, A. Matros, *All-Pay Auctions vs. Lotteries as Provisional Fixed-Prize Fundraising Mechanisms: Theory and Evidence*, 2012, https://www.researchgate.net/publication/228460059_All-Pay_Auctions_vs_Lotteries_as_Provisional_Fixed-Prize_Fundraising_Mechanisms_Theory_and_Evidence (access: 10.01.2020).

[18] O. Bos, "Charity auctions for the happy few", *Mathematical Social Sciences* 79, 2016, pp. 83–92.

[19] C.E. Landry et al., "Toward an understanding of the economics of charity: Evidence from a field experiment", *Quarterly Journal of Economics* 121, 2006, no. 2, pp. 747–782; A. Lange, J.A. List, M.K. Price, "Using lotteries to finance public goods: Theory and experimental evidence", *International Economic Review* 48, 2007, no. 3, pp. 901–927; J. Morgan, "Financing Public Goods by Means of Lotteries", *The Review of Economic Studies* 67, 2000, no. 4, pp. 761–784.

[20] H. Orzen, op. cit.

[21] L. Corazzini, M. Faravelli, L. Stanca, op. cit.

tribution, which corresponds with theoretical predictions. The conclusions were drawn after including the cost of the prize in the analysis. On average, voluntary contributions achieved 20% lower public good provision than lotteries and about 3.5% lower than all-pay auctions.

However, Onderstal, Schram, and Soetevent do not support those findings. The study aimed to investigate different fundraising mechanisms, i.e. the all-pay auction, the lottery, and voluntary contribution (anonymous and non-anonymous) while conducting a field experiment on households. Surprisingly, the amount of money raised in all-pay auctions was significantly lower than in the anonymous voluntary contributions. There were no more significant differences regarding revenues between the other formats. The authors explained those results underlining that voluntary contributions are the common way of raising funds door-to-door in the Netherlands where the experiment took place.[22]

The relevant aspect for auctioneers who aim to choose the right fundraising mechanism is also bidders' willingness to participate. According to the study by Onderstal, Schram, and Soetevent people participate less often in all-pay auctions (about 55%) than in lotteries or voluntary contributions (about 65%). The authors suggested that potential buyers more often participate in lotteries than in all-pay formats bus less often than in the first-price auction.[23]

Although voluntary contributions seem to be a less effective mechanism for charities to raise money, the conclusion regarding auction and lotteries is not obvious. The lack of consistency in presented findings regarding lotteries and auctions may stem from the fact that some conclusions results from theoretical considerations while others — from empirical examination. Many studies focused only on specific types of auction. Further research might make a comparison between different auction formats.

Which type of auction is the best for raising funds?

Focusing exclusively on charity auctions, researchers investigated which format enables auctioneers to raise the highest revenues for the public good. The majority of studies focused on the comparisons of all-pay formats in which every participant submits the bid, but only the bidder with the highest bid receives the auctioned object with single-price contests.[24] The authors also considered the last-price all-pay formats in which the bidders pay the lowest price. However, this type of auction is not widespread among auctioneers.[25] It should be noted that charities also use different formats of auctions in order to raise money. One of them is

[22] S. Onderstal, A.J.H.C. Schram, A.R. Soetevent, "Bidding to give in the field", *Journal of Public Economics* 105, 2013, pp. 72–85.

[23] Ibidem.

[24] M. Engers, B. McManus, op. cit.

[25] H. Orzen, op. cit.

the silent auction, in which there are multiple items for sale and the participants submit the bids for all of the items simultaneously. The potential buyers write the ascending bids — hence the term contains "silent". This format is often used by charities because it makes it possible to sell a great number of objects in a short time without the necessity of having a professional auctioneer.[26] It is also worth noting that silent auctions allow a charity to sell a large number of donated items at low transaction costs.[27] The question arises which charity auction format is an effective method of raising funds for a good cause.

The study of Goeree, Onderstal, and Turner[28] indicates that winner-pay contests are ineffective in terms of raising funds for a good cause. Interestingly, according to the authors, third-price auctions are more profitable than both first-price and second-price ones. However, the article focuses mainly on various types of all-pay auctions and demonstrating that the optimal format of raising funds is the lowest-price all-pay auction. On the other hand, out of these formats the least effective seems to be the first-price all-pay format.

According to Engers and McManus,[29] in the case of a sufficiently large number of bidders, all-pay formats will generate more revenues than single-price formats. Besides, when it comes to absolute auctions the type in which all participants pay a bid will always provide more funds than the first-price auction. However, this dependence is not observed in the case of the second-price auction. Considering the single-price formats, second-pay auctions are a better way of raising funds than first-price auctions. In second-price contests the bidder may influence the final price of the auctioned item. In contrast to first-price and second-price formats, in all-pay auctions the bidder has no influence on whether the other bidder will pay the auctioneer or not.

Similar findings were presented by Schram and Onderstal[30] who also concluded that all-pay auctions are a more recommended way of raising money for charity than winner-pay formats. Specifically, the authors analysed two aspects: efficiency and revenue, in first-price winner-pay auctions, first-price all-pay auctions, and lotteries, which are a different fundraising category. Although the formats with only the winner paying for the bid were concluded to be the most efficient, it turned out that the contests with all participants paying for the bid allow generating higher revenue.

Although the majority of studies are consistent and indicate that the all-pay auction is a preferable mechanism of raising money for a good cause, not every

[26] R.M. Isaac, K. Schnier, "Silent auctions in the field and in the laboratory", *Economic Inquiry* 43, 2005, no. 4, pp. 715–733.

[27] R.M. Isaac, K. Schnier, "Sealed Bid Variations on the Silent Auction", *Research in Experimental Economics* 11, 2006, pp. 31–46.

[28] J.K. Goeree, S. Onderstal, J.L. Turner, "How (not) to raise money", *Journal of Political Economy* 113, 2005, no. 4, pp. 897–918.

[29] M. Engers, B. McManus, op. cit.

[30] A.J.H.C. Schram, S. Onderstal, op. cit.

all-pay format is equally efficient. In the study by Orzen[31] different fundraising mechanisms have been investigated, such as first-price all-pay auction, last-price all-pay auction, and the variation of the last-pay format where there is no price (voluntary contributions and lotteries have been examined as well). Focusing exclusively on auction formats, the findings suggested that the last-price all-pay mechanism generates more revenue than the first-pay contest. Interestingly, the scheme with no elicit reward turned out to be even more effective — it means that the inclusion of the reward may not be indispensable to encouraging the potential bidders. These all-pay formats enhance participants to be more cooperative. The author discussed the effectiveness of k-price all-pay formats noting that participants may feel responsible for the auction outcome if they realize that the low bid not only affects their donations but other's bidders' as well.

However, some studies provide contradictory results regarding the most efficient formats of charity auctions. The study of Carpenter, Holmes, and Matthews[32] does not support the previous research indicating that all-pay formats elicit higher revenues than winner-pay auctions. According to the authors, the auctioneers raise more money for charity using the first-price single-pay formats than second-price single-formats (about 19$). Furthermore, the revenues from the first-price auctions turned out to be slightly higher than profits in the all-pay contests (about 16.50$). The all-pay and second-price formats, on the other hand, seemed not to achieve remarkably different revenues. Apart from measuring the differences in revenues in various formats of fundraising auctions, the authors also examined the efficiency of each format. They demonstrated that the efficiency of allocating the auctioned items is the lowest for the second-price single-pay format. Also, in this aspect, research has shown the superiority of the first-price winner-pay contest over the all-pay format. The study considered the costs aspect as well. According to the findings, the participation in all-pay auctions was lower than in other formats. As participation costs are high for all-pay auctions, charities should consider other formats for inexperienced bidders.

Bos[33] also showed that all-pay formats may not be the most profitable way of raising funds for the public good. The author suggested that it may depend on the asymmetry among the participants. When there is a high disproportion between bidders, their bidding strategies change and the competition decreases. It affects more the all-pay formats and, consequently, reduces the revenues generated using this mechanism while not influencing winner-pay formats. On the other hand, externalities give an advantage to all-pay formats. As a result, in the conditions of

[31] H. Orzen, op. cit.

[32] J. Carpenter, J. Holmes, P.H. Matthews, "Charity auctions: A field experiment", *Economic Journal* 118, 2008, no. 525, pp. 91–113.

[33] O. Bos, op. cit.

great asymmetry, for all-pay formats (first-price and second-price) to earn more revenue than winner-pay formats (first-price and second-price) the level of altruism should be higher.

The results of the studies conducted so far do not clearly determine which charity auction format is the most effective. The majority indicate the all-pay format to be the most lucrative. However, some factors should be taken into account that may affect the effectiveness of those mechanisms, i.e. the asymmetry of information. Additionally, when choosing the auction type, charities should take into account that more people participate in the first-price format than in the all-pay one.[34] More attention should also be paid to the silent auction format that is commonly used by charities.

Do people pay more at charity auctions than at non-charity auctions?

The question worth examining is how the charity status of the auction affects the participants' behaviours. The researchers have investigated the issue by comparing the charity and non-charity formats. The differences can be easily seen while examining the prices.

The study of Engers and McManus[35] examined common auctions formats used for fundraising, i.e. first-price, second-price, and all-pay. It was demonstrated that both first-price and second-price charity auctions achieve higher bids than non-charity auctions. The reason for this is that in these formats participants can gain profits from their payments. Elfenbein and McManus[36] demonstrated that items auctioned at charity auctions (on eBay) achieve higher prices than items sold at non-charity auctions (on average about 6%). The authors investigated the auctions with a various share of revenue being dedicated to charity (10%, 50%, 100%). It turned out that the biggest difference in prices between the mentioned types of auctions was observed with 100-percent-share auctions (in favour of the fundraising type). Generally, participants bid higher at fundraising auctions in comparison with non-charity auctions — they submit higher bids no matter if they win. Not only does the charity auction seem to outperform auctions without that status in terms of the highest bid, but also further bids are notably higher (second, third, fourth).

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[34] J. Carpenter, J. Holmes, P.H. Matthews, op. cit.; A.J.H.C. Schram, S. Onderstal, op. cit.

[35] M. Engers, B. McManus, op. cit.

[36] D.W. Elfenbein, B. McManus, "A Greater Price for a Greater Good? Evidence that Consumers Pay More for Charity-Linked Products", *American Economic Journal: Economic Policy* 2, 2010, no. 2, pp. 28–60.

Popkowski Leszczyc and Rothkopf[37] also examined the differences in prices between charity and standard auctions. The results of the experiment indicated that charity status increases the prices of the auctioned objects — the prices of the same items were higher in charity auctions than in non-charity auctions (the mean selling price was $25.98 and $19.13 consecutively). What should be noted is that the observed differences are not caused by the number of participants (there were fewer bidders in charity auctions) — the higher charity prices stem from the charitable motives of the participants. According to the study, the premium that is paid by the bidders with charitable motivation differs on average from 11% to 45%.

The prices in charity and non-charity auctions have been compared in the study by Canals-Cerdá.[38] The author analysed auctions from the Auction for America program on eBay (a program directed towards helping the victims of the September 11 terrorist attacks), charity auctions organized independently by the artists, and non-charity auctions. The findings indicate that charity status increases the final auction price — for the auctions belonging to the Auction for America program the average was about 45% and for the other charity auctions — about 30%.

Popkowski Leszczyc, Qiu, Li, and Rothkopf[39] conducted a field experiment on an Internet auction website in which they tested bidding behaviours in charity and non-charity auctions with and without the presence of covert agent bidders. The study showed that the charity auctions raised 35.81% more money for the public good than non-charity auctions.

However, the literature has presented some not entirely consistent findings. Isaac, Pevnitskaya, and Salmon[40] investigated how the charitable preferences of the bidders affected the revenue in charity auctions. Although in a few cases the charity auctions dominated non-charity auctions, generally, there was no significant difference in the achieved revenue — only a slightly positive effect of charity. The results of the experiment indicated that a change in bidding behaviour has been observed only in 10–15% of participants. Moreover, in the study by Schram and Onderstal[41] only in the case of all-pay charity auctions did the achieved revenues turn out to be higher than in non-charity auctions. Charity status has not positively affected the revenue in either the winner-pay format or the lotteries.

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[37] P.T.L. Popkowski Leszczyc, M.H. Rothkopf, "Charitable motives and bidding in charity auctions", *Management Science* 56, 2010, no. 3, pp. 399–413.

[38] J.J. Canals-Cerdá, "Charity Art Auctions", *Oxford Bulletin of Economics and Statistics* 76, 2014, no. 6, pp. 924–939.

[39] P.T.L. Popkowski Leszczyc et al., "Bidding behaviors in charity auctions", *Marketing Letters* 26, 2015, p. 26.

[40] R.M. Isaac, S. Pevnitskaya, T.C. Salmon, "Do preferences for charitable giving help auctioneers?", *Experimental Economics* 13, 2010, no. 1, pp. 14–44.

[41] A.J.H.C. Schram, S. Onderstal, op. cit.

Table 1. Studies comparing charity and non-charity auctions

Author and year of the study	Type of the study	Main conclusion
Engers and McManus (2007)	Theoretical study.	Higher bids are assumed to be offered in first-price and second-price charity auctions in comparison to standard auctions.
Schram and Onderstal (2009)	Laboratory experiment conducted on 290 students from the University of Amsterdam; the study was conducted between the fall of 2002 and in October 2007; 28 sessions that lasted from 60 to 90 minutes.	Compared to standard auctions, higher revenues were generated during charity auctions only in the all-pay format. In the case of the lottery and the winner-pay format, no differences were observed.
Elfenbein and McManus (2010)	Empirical analysis of data on charity and non-charity auctions on eBay that ended between March and December 2006.	In the case of auctions where 10% of the revenue was allocated to the charity auction, the prices were 5% higher than in the standard auctions, and when 100% revenue was dedicated to a good cause, the prices were 7% higher.
Isaak, Pevnitskaya and Salmon (2010)	Two types of experiments — with induced and non-induced price proportional preferences; 30 auctions of four bidders; the schemes used: sealed bid first-price or sealed bid second-price; treatments: the basic preferences in charity auctions; the treatment with the bidder receiving the utility only from winning and the treatment with a bonus from losing.	No statistically significant difference between charity and non-charity revenues.
Popkowski Leszczyc and Rothkopf (2010)	Three field experiments which were part of the Edmonton Sun's annual Christmas auctions; experiments 1 and 3 involved 152 auctions and experiment 2 — 211 auctions; the experiments were conducted on a local Internet auction site.	The auctioning prices are greatly increased by donating the proceeds to charity. Although more participants attended non-charity auctions, higher prices were achieved at charity auctions.

Canals-Cerdá (2014)	Empirical analysis based on data from auctions from 243 artists selling their artworks through eBay; some artists offered a part of their profits from sales for charity; 5,879 standard and 377 charity auctions.	The charity status of the auction notably increased the final prices with respect to the prices obtained at standard auctions.
Popkowski Leszczyc, Qiu, Li and Rothkopf (2015)	320 auctions on a local Internet auction website that took place from November 3 to 5, 2004; two types of auction (charity and non-charity); auctions with and without a covert agent bidder.	Charity auctions raised 35.81 % more funds than non-charity auctions.

Source: own elaboration based on the available literature.

Chua and Berger[42] compared the prices of the same products being sold on a charity auction website (eBay) and on non-charity websites. The study revealed that out of eight observed differences, in the case of five products the mean prices were higher on non-charity auction websites. The prices of three products sold on the charity auction website outperformed the non-charity sales. The authors concluded that charity organizations may raise more money by using regular online auction websites rather than charity auction websites.

Generally, charity status makes the auction items achieve higher prices. Even though the literature provides us with evidence regarding the higher effectiveness of charity auctions than non-charity auctions, caution should be taken due to inconsistent results. Nevertheless, the analysis of the differences between charity and non-charity auctions, besides prices, relate to the other aspects as well. Researchers have investigated a wide variety of bidding behaviours, i.a. the participants' reactions after losing or the willingness to attend in each auction type.

According to studies that examined bidders' motives, losing does not discourage people from participating in charity auctions — the players may be still submitting the bids despite having failed at auctions in the past.[43] Furthermore, some findings indicate that a charity status may increase the probability of sale. Canals-Cerdá[44] showed that the probability of selling items put up for a charity auction (belonging

[42] C. Chua, I. Berger, "Charity auctions on the internet: An exploratory study", Working Paper Series 2, 2006, Centre for Voluntary Sector Studies, Ryerson University, https://digital.library.ryerson.ca/islandora/object/RULA%3A7339 (access: 10.01.2020).

[43] P.T.L. Popkowski Leszczyc, M.H. Rothkopf, op. cit.; P.T.L. Popkowski Leszczyc et al., op. cit.

[44] J.J. Canals-Cerdá, op. cit.

to the Auction for America program) was higher than at non-charity auctions. The authors examined other charity auctions as well but the dependence was not that explicit. The study also indicated that charity status may increase the number of bidders. However, the results might be influenced by the auction dates — the biggest differences were observed after the September 11 attacks and slowly declined over time.

Charity auctions seem to have fewer participants than non-charity auctions. However, it was shown that players with charitable motives are willing to submit significantly higher bids for the same product when it is auctioned for the public good than when it is auctioned at a non-charity auction. Consequently, auctioneers may not focus on looking for the biggest number of potential bidders but they should attract the right participants.[45] The other difference between charity and non-charity auctions regards the timing of bid submission — it was observed that players at charity auctions make bids earlier and, as a consequence, incentivize the other bidders.[46] From the auctioneers' perspective, attention should be paid to the types of the auctioned products as well. Findings indicate that low-valued products achieve higher charity premium than high-value products. Therefore, charities should not refrain from submitting them for sale. The study also indicated that functional products (e.g. electronics) achieve higher prices than frivolous products (e.g. jewellery or artworks).[47]

The authors also emphasized the role of agents in shaping charity prices — the charity and non-charity prices differed even more when a bidding agent took part in the auction. The additional price premium of the agents reaches 45.9% for charity and 26.5% for standard auctions. Regarding the type of donation, it is better to create an auction when there is no fixed amount of money dedicated to charity after each sale — for example where the donated part constitutes a percentage of the dynamically set selling price. No difference was observed in terms of prices at non-charity auctions and at auctions with a fixed sum donated to charity. However, the items with variable donations (40% donated) achieved significantly higher prices.[48]

The cost of fundraising may also play a vital role in the performance of charity auctions. Thus, the prospect that the auction winner does not benefit for themselves but for the social welfare should be taken into account. In a situation where a charity organization bears the cost of the auctioned object, it then reduces this social welfare.[49] Onderstal, Schram, and Soetevent[50] assumed that participants are

[45] P.T.L. Popkowski Leszczyc et al., op. cit.
[46] D.W. Elfenbein, B. McManus, op. cit.
[47] P.T.L. Popkowski Leszczyc et al., op. cit.
[48] P.T.L. Popkowski Leszczyc, M.H. Rothkopf, op. cit.
[49] D.D. Davis et al., op. cit.
[50] S. Onderstal, A.J.H.C. Schram, A.R. Soetevent, op. cit.

reluctant to contribute because of the cognitive cost related to the decision on the amount of money to be allocated, as well as the physical cost resulting from obtaining the money. From the perspective of companies, in turn, it may be assumed that charity auctions are a cost-effective way to improve a company's image by affiliating with a charity.[51]

The observed differences between charity and non-charity auctions may result from the bidders' motives to donate money for charity. Generally, bidders may attend charity auctions due to various reasons. It was assumed that participants may obtain additional utility because the revenue is collected for a good cause. The utility may stem from the bidder's own or others' contributions. In a pure altruism model, people receive utility from money donated for charity, regardless of the source. A warm glow model assumes that people obtain utility both from their own and others' donations, but they aim to win the object. A similar pattern occurs in a see-and-be-seen model but people gain utility from being a winner, not from the money collected by others. Finally, according to a volunteer shill model, donators receive utility when other bidders give money to charity. After conducting a field experiment, the authors found out that people act as volunteer shills.[52]

Conclusions and implications for charity organizations

One of the essential tasks of charitable organizations is to develop strategies that help them attract resources. Specifically, charities choose various fundraising mechanisms looking for the most profitable one. Thus, a crucial issue for the auctioneers is also finding ways of improving the effectiveness of different fundraising formats. The main goal of the paper was to examine the charity auction as a method of raising funds for the public good.

The results do not conclusively determine which one between the auction and the lottery is the more effective mechanism of raising money for charitable purposes. The findings may be inconsistent due to some researchers focusing on theoretical predictions while others tested the questions empirically (while conducting field and laboratory experiments).

However, the majority of the studies indicated that when choosing an auction, charity organizations should use the all-pay format over the single-price mechanism. Charity auction formats also differ in terms of people's participation — higher participation is observed in winner-pay auctions than in all-pay contests. It should be borne in mind when considering different mechanisms that people may not be willing to attend the formats they do not know.

In general, there are significant differences between charity and non-charity auctions. Although there are studies that provided different results, a number of them

[51] P.T.L. Popkowski Leszczyc, M.H. Rothkopf, op. cit.
[52] Ibidem.

revealed that prices seem to be higher in charity auctions. Bidders are also more willing to participate in charity auctions after losing in comparison with standard auctions. Items at charity auctions seem to be more likely to be sold than items at standard auctions. From the perspective of the auctioneers, it is crucial to attract the attention of people with charitable motives — if they decide to participate in the auction, they seem to be likely to bid higher than at non-charity auctions.

Taken together, these results suggest that the charity auction may be an effective way of raising money for the public good. However, further experimental investigations are needed to estimate the performance of various formats in different conditions.

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