

How does relationship length influence donation amount over time for regular members? The moderating role of donation frequency

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How does relationship length influence donation amount over time for regular members of nonprofit organizations? The moderating role of donation frequency

Abstract

Purpose

The purpose of this study is to investigate whether a U-shaped relationship exists between the length of time a donor has been a regular member in a nonprofit and the amount donated over time. In addition, this research analyzes whether this relationship is moderated by donation frequency.

Design/methodology/approach

Using a database of 6,137 regular donors from a collaborating nonprofit organization, a longitudinal study is conducted over an eight-year period (2013–2020). A set of ordinary least square (OLS) regression analyses are carried out to empirically test the proposed hypotheses.

Findings

This study finds a nonlinear, U-shaped relationship between donation amount and relationship length. This effect can be explained through the dynamic evolution of two dimensions of commitment: affective (decreasing over time) and normative (increasing over time). The results also reveal that these effects, however, become flatter for members who engage in more frequent donations.

Originality/value

The results provide novel insights revealing the nonlinear nature of the relationship between the length of time a donor has been a member of a nonprofit organization and the amount donated, and underscores the moderating role of donation frequency, which makes the U-shaped relationship flatter, thus increasing the amounts donated. Despite their relevance in the service ecosystem, nonprofits have been under-represented in prior work. This study offers important practical insights into the effective management of the regular donor portfolio.

Keywords Regular members, Organizational commitment, Relationship length, Donation amount, Donation frequency

1. Introduction

Recurrent social problems in the world such as unemployment, lack of essential services, diseases in underdeveloped countries, environmental disasters, or human migration have led many people to experience vulnerability and encounter barriers to integrating into society (Van Puyvelde and Brown, 2016). In an attempt to respond to these societal challenges, service scholars highlight the need for creating relevant research that improves well-being (Ostrom *et al.*, 2015; Rahman, 2020) and underscore the central role of nongovernmental organizations [NGOs] and their societal relevance within the service ecosystem (Finsterwalder *et al.*, 2021). Financial support is critical to nonprofit organizations, since it enables them to fund their charitable programs – aimed at providing a wide variety of public services, including educational, health, essential community services or those with an environmental purpose – and legitimizes their existence (Bolton, 2020; Cheung *et al.*, 2017; van Dijk *et al.*, 2019). However, in the last two decades, decreasing contributions provided by public institutions together with the proliferation of nonprofit organizations (Arnett *et al.*, 2003; Fang *et al.*, 2021), many of them providing similar services, has forced nonprofit institutions to rely on private donations as their main source of financial support (Development Initiatives, 2020; Drollinger, 2018). Therefore, a fundamental goal of nonprofit organizations is to find effective strategies to increase the size of the donations they receive as well as the pool of supporters who pledge to donate regularly (Oh and Ki, 2019; Sargeant *et al.*, 2006), thus providing stable financial support. In order to assist nonprofits in developing effective strategies, there has been a growing interest in recent years in what leads to regular donors increasing their donations (Wang and Ashcraft, 2014; Drollinger, 2018). Most studies addressing the nonprofit service organizations domain suggest that the length of the member–organization relationship is one of the main factors helping to explain donor behavior over time (Fang *et al.*, 2021; Khodakarami *et al.*, 2015; Ki and Oh, 2018; Wang and Ashcraft, 2014). As a result, fundraisers have started to apply relationship marketing techniques to the enrichment of their donor portfolio and the retention of their regular members in an attempt to encourage further contributions (Atlas and Bartels, 2018; Fang *et al.*, 2021; Khodakarami *et al.*, 2015; Weir and Hibbert, 2000). However, the literature reveals mixed evidence regarding the impact that length of membership in an organization has on commitment and identification, thus suggesting variant effects on member contributions.

On the one hand, some scholars in the nonprofit membership domain consider relationship length to positively influence one's sense of belonging to an organization and, consequently, the support and monetary donations provided (Ki and Oh, 2018; Wang and Ashcraft, 2014). In their study, Ki and Oh (2018) find that long-term members tend to become more generous (by giving greater donation amounts) than those who have been members for fewer years in the organization. Similarly, Fang *et al.* (2021) find, based on a survey among nonprofit professional association members, that membership length positively influences members' donation amounts. On the other hand, contradictory evidence is presented in research on organizational commitment and identification. Bhattacharya *et al.* (1995), for example, suggest that although the time of a member's affiliation in an organization can increase organizational identification, this effect becomes weaker over the years, making identification diminish. In line with this, others argue that in newly formed relationships, motivational aspects emerge, including emotional arousal, affective attachment, or positive attitudes that members develop toward service providers and organizations (Karjaluo *et al.*, 2016; Reimann *et al.*, 2012). These effects, however, tend to decrease as relationships mature (Raimondo *et al.*, 2008), and organizational commitment is explained by other factors more related to habits, inertia, or subjective norms (Karjaluo *et al.*, 2016). If commitment deteriorates over time (Beck and Wilson, 2000), meaning that members experience lower levels of involvement and perceived value (Naskrent and Siebelt, 2011), this in turn would lead to negative consequences on donations, thus affecting the amount of money members contribute (Sargeant *et al.*, 2006; Sargeant and Lee, 2004). Given the mixed evidence, a better understanding of how relationship length affects financial support provided by regular members is needed.

The main goal of this study is thus to investigate the relationship between the length of time a donor has been a regular member in a nonprofit organization and the contributions provided to the organization over time. We take a dynamic perspective, given the potential changes in the underlying forces and mechanisms that govern this relationship over time, which is usually absent from previous research, where a cross-sectional approach to the study of relationship length effects has been dominant (Fang *et al.*, 2021; Ki and Oh, 2018; Verhaert and Van den Poel, 2012; Wang and Ashcraft, 2014). We draw from organizational commitment literature to propose a conceptual framework, in which we argue that regular members develop different types of commitment, namely, affective

commitment and normative commitment (Naskrent and Siebelt, 2011), which influence their contributions and evolve differently over time. Specifically, we propose that over time, affective commitment decreases while normative commitment increases, producing a U-shaped relationship between the length of time a donor has been in an organization and the amount contributed. Importantly, we also analyze whether this nonlinear relationship between length and donation amounts is affected by the frequency with which regular donors provide their donations during the year; for example, yearly (once a year), quarterly (four times a year), or monthly (12 times a year). We argue that the different number of interactions and touchpoints implied by these frequencies will affect the development of both affective and normative commitment over time, ultimately modulating the association between relationship length and monetary contributions provided. Using panel data corresponding to a nonprofit organization's donor portfolio (composed of 6,137 regular members), we conducted a longitudinal study to understand donation behavior over time (2013–2020). The main findings offer support for a nonlinear, U-shaped relationship between relationship length and monetary contributions, which becomes flatter for members who engage in more frequent donations (i.e., higher frequency of donations).

This study contributes to the service research in nonprofit settings by offering novel insights into the interrelationship between the length of time members have been in the organization and the financial support they provide to it. First, applying an organizational commitment approach, our study illuminates the different types of commitment (i.e., affective and normative) and their variant influence on the contributions provided. This study extends previous knowledge by showing that the link between membership tenure and donation amounts is nonlinear and evolves over time. Second, this research advances the key moderating role played by the frequency with which members provide their donations (e.g., yearly, quarterly, monthly), demonstrating that the number of interactions with the nonprofit may affect the evolution of affective and normative commitment and thus, contributions over time. Our findings therefore provide valuable knowledge into a potential factor that enables fundraisers to target donors more accurately. Third, this study contributes to a better understanding of the donor portfolio and its dynamic evolution, offering important practical insights into the effective management of the regular donor portfolio, which is critical for the survival of third sector institutions. With a significant decline in the contributions made by individuals to social causes and the proliferation of

multiple organizations competing for funding, engaging private contributors in regular donations, and building stronger relationships with them, has become a major focus for nonprofits. Despite their relevance in the service ecosystem, NGOs have been under-represented in prior service work (Anderson *et al.*, 2013; Ostrom *et al.*, 2015). Our study thus responds to societal challenges, suggesting an opportunity for fundraising managers who pursue member commitment and in turn support the organization financially in a significant way.

2. Conceptual background and hypotheses

Previous evidence shows that nonprofit service organizations are increasingly trying to understand why financial supporters become involved (Boenigk and Helmig, 2013) and what motivates them to increase their level of commitment, donations, and participation in service exchange programs (Bekkers and Wiepking, 2011; Choi *et al.*, 2019; Polonsky and Sargeant, 2007; Weir and Hibbert, 2000). In this section, we introduce our conceptual framework and hypotheses, which aim to provide an understanding of the relationship between the time a donor has been a member of a nonprofit organization (i.e., relationship length) and the amount of money donated. We develop the conceptual model with existing research in service marketing, drawing from theories of organizational commitment that analyze the psychological states underlying an individual's commitment to an organization (Allen and Meyer, 1990; MacMillan *et al.*, 2005; Naskrent and Siebelt, 2011). Commitment has been identified as a relational factor that influences customer loyalty attitudes and behavioral responses (Han *et al.*, 2008; Pritchard *et al.*, 1999). In the nonprofit service context, donor commitment is defined as “the psychically caused attachment or obligation of the donor with regards to the supported NPO, which the donor demonstrates by the appreciation of the relation and a sustainable desire to engage in the continuity of the relation with the NPO” (Naskrent and Siebelt, 2011, p. 761). Prior research notes that some underlying factors of these forces may be affective – binding individuals to the service provider out of desire – and normative – binding individuals to the service provider out of perceived obligation (Bansal *et al.*, 2004). Emotional attachments or feelings of obligation form the basis of commitment and the motivation to continue supporting the organization, as well as the desire to contribute significantly (Fang *et al.*, 2021; Khodakarami *et al.*, 2015). The literature distinguishes between two

types of commitment: affective commitment and normative commitment (Naskrent and Siebelt, 2011). Affective commitment is derived from a set of states related to affection, emotions, and sympathy toward the organization. Normative commitment, in contrast, is promoted by feelings of moral obligation and organizational loyalty (Allen and Meyer, 1990; Naskrent and Siebelt, 2011).

In addition, our focus is on the frequency with which regular members provide their donations during the year and the extent to which different frequencies moderate the relationship between length and donation amounts. For example, a \$120 donation in a year can be provided as \$120 yearly, \$30 quarterly, or \$10 monthly. We argue that these differences in the frequency with which financial support is provided directly affect the number of interactions that occur between members and organizations. Similar to other service settings, donation exchanges involve interactions among donors and service providers (Polonsky and Sargeant, 2007). The number of interactions can present an opportunity to strengthen relationships, since they affect the development of donors' commitment (both affective and normative) toward an organization over time and, in turn, condition the amounts they contribute. Figure 1 offers a graphical representation of the proposed framework. In the next sections, we present the research hypotheses within a discussion of the relationship between a member's relationship length and the donation amount based on the evolution of the two types of commitment over time as well as the moderating role of donation frequency.

<Insert Figure 1 about here>

2.1. Relationship length and donation amount

Customer commitment has been identified as a very important driver of relationship outcomes in the service field, and as a result many service organizations focus on maximizing customer lifetime value through increasing and maintaining organizational commitment among their customers in the long run (Bansal *et al.*, 2004; Raimondo *et al.*, 2008; Verhoef *et al.*, 2002). In the nonprofit service context, organizational commitment has also been identified as a fundamental aspect that determines the amount of financial support that individuals are willing to provide to an organization (Sargeant *et al.*, 2006; Sargeant and Lee, 2004; Shang *et al.*, 2019). As noted previously, there are two types of organizational commitment: affective commitment and normative commitment. The

impact of relationship length on the donation amount will depend on how the two types of commitment evolve over time.

Affective commitment tends to decrease over time (Beck and Wilson, 2000; Lok and Crawford, 2001). When individuals start a relationship with a service organization, they develop a strong intrinsic motivation, which is driven by emotional arousal and affective attachment (Karjaluoto *et al.*, 2016; Reimann *et al.*, 2012; Van Doorn *et al.*, 2010). In a donor context, individuals also experience the need to help the organization and support social causes (Bekkers and Wiepking, 2011; Batson and Shaw, 1991; Bendapudi *et al.*, 1996). They also form expectations about the quality of the exchange with the organization in terms of the expected benefits and rewards they might receive from their engagement with the organization (Ariely *et al.*, 2009; Cohen, 2007), such as the personal benefits and the level of enjoyment achieved through their contributions. In these early stages of the relationship, members experience greater levels of enjoyment (Ferguson *et al.*, 2012), as well as greater organizational identification (Fang *et al.*, 2021), fostered by a sense of belonging and shared values with the organization itself (Bhattacharya *et al.*, 1995; Naskrent and Siebelt, 2011). All this leads members to be willing to provide strong support to the organization. Over time, however, these psychological states tend to decrease. Raimondo *et al.* (2008) argue that as the relationship matures, satisfaction has a lower impact on loyalty and therefore, on the commitment driven by a psychological sense of attachment to the relationship. Intrinsic motivation deteriorates as time passes (Ki and Oh, 2018) because the satisfaction obtained after continuous donations and the donor's expectations about the personal benefits achieved have been covered over time. Thus, over a period of years of experience with the organization, emotional involvement (Karjaluoto *et al.*, 2016), enjoyment (Khodakarami *et al.*, 2015), and, consequently, giving may decline.

Normative commitment, in contrast, increases over time. As the relationship between a member and the organization evolves, other drivers of commitment emerge (Bhattacharya *et al.*, 1995; Raimondo *et al.*, 2008). Normative commitment derives from psychological states related to moral obligation, responsibility for organizational outcomes, and loyalty to the organization (Naskrent and Siebelt, 2011), and develops when individuals internalize a set of norms concerning appropriate behavior (Meyer and Allen, 1997). At the beginning of the relationship, low levels of responsibility and moral obligation to the organization exist, so normative commitment is expected to be low. As they accumulate

experience with the organization, members may start to feel the normative pressure to act in accordance with the organization's interests and objectives. An important psychological state underlying this is the belief that supporting the organization is the right thing to do (Allen and Meyer, 1990; Karjaluoto *et al.*, 2016), resulting in consumers staying with a service provider because they feel they ought to. Members who stay longer in the organization present high levels of loyalty, due to their long stay in the organization, and show significant financial commitment due to fear of the negative consequences that deciding to stop donating or to donate less could have on the organization they support (Naskrent and Siebelt, 2011).

The previous discussion suggests that, over time, affective commitment decreases while normative commitment increases, leading to a U-shaped relationship between length and donation amounts (as shown graphically in Figure 2). Specifically, donations are expected to be higher for short- and long-term members compared with mid-term members. Hence, we propose:

Hypothesis 1. The relationship between donation amount and relationship length follows a U shape: it decreases over time up to a point from which relationship length leads to increased contributions.

<Insert Figure 2 about here>

2.2. The moderating role of donation frequency

We argue that the relationship between donation amount and relationship length will be affected by the frequency with which donors contribute. We believe the frequency of donations can play an important moderating role because it directly affects the number of interactions between members and nonprofit service organizations. For example, a donor who provides a yearly donation has one interaction with the nonprofit organization during the year, whereas a donor who provides a monthly donation engages in 12 interactions in a year. The interactions between people form the basis for the development of their relationship (Venkatesan *et al.*, 2007) and can enhance commitment to a nonprofit organization (Bennett and Barkensjo, 2005). Multiple interactions can also lead to increase trust. This is in line with earlier evidence suggesting that trust is positively related to the number of services purchased (Verhoef *et al.*, 2002). Thus, variations in the number

of interactions with the nonprofit organization can lead to differences in the development of affective and normative commitment.

As noted previously, affective commitment is high when donors begin their relationship with the organization, but it decreases over time. We argue that this decrease is less steep for individuals who engage in more frequent donations (e.g., monthly) than for those who contribute less frequently (e.g., yearly). In the early stages of the relationship, customers have less confidence in their evaluation of the service provider (Verhoef *et al.*, 2002), therefore, increasing their interaction experiences (e.g., service usage or good purchase) may allow them to enhance satisfaction and maintain a more lasting affective commitment. In the context of nonprofit service organizations, previous studies offer evidence regarding the effect of the number of times donors give to the organization on the donor–organization relationship (Waters, 2008). Donors who make multiple gifts, compared to those who make one-time donations, may feel a higher level of dedication to the services provided by the organization and thus perceive their relationship with the organization as more mutual, meaning that each party is concerned about the well-being of the other (Waters, 2008). Other studies support this idea. An ongoing relationship based on frequent contacts with service providers can strengthen the perception of the existence of a close relationship (Ashley *et al.*, 2011), thus maintaining or even increasing an individual’s affective commitment. Second, through higher frequencies of donations, members can perceive more personal benefits from giving and experience higher levels of warm glow – the personal well-being attained by feeling that they are doing their part (Andreoni, 1989) – and satisfaction each time they make a donation (Atlas and Bartels, 2018). This emotional warm glow benefit from giving frequently could result in greater commitment and lead to greater stability in the long-term (Faulkner *et al.*, 2016). Moreover, by donating more frequently, donors may perceive that their donations are being allocated to a greater number of causes and that this frequent support will have a more substantial impact on the beneficiaries (Sargeant *et al.*, 2004). This can cause donors to feel more involved with the daily operations of the organization, promoting a more meaningful relationship between the donor and the nonprofit (Bennett, 2006; Waters, 2008). More frequent donation periodicities can therefore promote a greater feeling of dedication to and involvement with the organization among members, as well as greater satisfaction from making meaningful contributions that can improve the beneficiaries’

situations (Bennett and Barkensjo, 2005), thus softening the decrease in affective commitment over time.

As noted, normative commitment increases over time. We argue that this increase will be less pronounced for members who engage in more frequent donations (e.g., monthly) than for those who donate less frequently (e.g., yearly). Donation frequency has been suggested as a good indicator of the degree of member involvement and active participation in donating to the organization's causes (Verhaert and Van den Poel, 2012; Zhong and Lin, 2018). Service literature highlights that the experiences from interactions with the service provider become more important in later stages of the relationship (Verhoef *et al.*, 2002). Allowing members multiple opportunities to interact with the mission of the organization may help cultivate stronger relationships based on the donor's dedication to and concern for the organization's mission (Bennett and Barkensjo, 2005; O'Brien *et al.*, 2020; Waters, 2008). Through making frequent donations, donors come to believe that the nonprofit is working efficiently toward achieving its goals (Carroll and Kachersky, 2019; Waters, 2011) and solving current social problems through its daily and continuous interventions. This is an important aspect for those donors who acquire more experience with the organization and begin to perceive a greater sense of responsibility and moral obligation toward the nonprofit and the success of its activities (Naskrent and Siebelt, 2011). Moreover, by participating more frequently, members may feel that their help is really useful to the nonprofit's interests (Allen and Meyer, 1990; Naskrent and Siebelt, 2011), resulting in them experiencing a personal benefit from a belief that important help is being given (Batson and Shaw, 1991). This may even help donors feel less normative pressure, instead perceiving a greater personal satisfaction that their contributions are maximizing the well-being of beneficiaries. Frequent periodicities can therefore generate greater emotional involvement with the organization and promote a stronger interest in the success of its activities among donors who remain within the organization. Consequently, the increase in normative commitment over time is softened.

Based on the above discussion, we expect the frequency of donation to exert a moderating role in the relationship between donation amount and relationship length by making the U-shaped relationship proposed in H1 flatter. Hence, we propose:

Hypothesis 2. The U-shaped relationship between donation amount and relationship length becomes flatter with higher donation frequencies.

3. Empirical study

3.1. Context

To test our proposed conceptual framework, this study uses data from a major nonprofit organization donor base in Spain. This organization operates by providing primarily social services (e.g., social and labor assistance), community development (e.g., development and sustainability projects to alleviate poverty and hunger problems), and housing services (e.g., family interventions) aimed at the most disadvantaged groups in society. Its donors, who are mostly from the same country in which the organization operates, are frequently informed about these services and are encouraged to increase their donations, through periodic newsletters and publications containing information about the interventions and programs carried out, as well as fundraising campaigns offering new donation opportunities. As noted, our focus is on regular donors, since they are of great importance for the continued activity of the organization and its survival (Oh and Ki, 2019; Sargeant *et al.*, 2006). The funds raised depend greatly on the contributions of regular members, and the ability to retain them is a major challenge for these institutions. Therefore, understanding the giving behavior of regular donors and what drives this behavior is of great importance to nonprofit service research and practice.

3.2. Sample and data

We obtained longitudinal information over a period of eight years (from 2013 to 2020) on donors who registered as members of the organization and contributed monetary amounts on an ongoing basis. The data contains longitudinal information at the donor level on (1) behavioral aspects (e.g., donation amounts, donation frequencies, previous occasional donations), (2) registration (date of donor registration), and (3) sociodemographic characteristics, which combines data provided by the members (gender, residential area where the donor lives) with data obtained through external sources, such as socioeconomic characteristics (income per capita of the donor's residential area). For this study we considered a final sample of 6,137 regular donors. For the selection of this sample, donors who contributed extremely high amounts were excluded. In doing so, we applied an outlier exclusion criterion in our analyses and excluded those cases that were more than 2.5 standard deviation above the mean donation amount ($M = 244.42$; $SD = 1024.29$; range = -2316.32 – 2805.17).

This comprehensive dataset enabled us to empirically test our hypotheses regarding the impact of the relationship length on donation amount as well as the moderating role of the frequency of donations with which a donor contributes. Table I describes the operationalization of all variables in the study. Table II presents the descriptive statistics and correlations of the studied variables.

<Insert Tables I and II about here>

We now explain in detail the operationalization of the central variables in our conceptual framework: donation amount, relationship length, and donation frequency. Donation amount ($Amount_{it}$) is measured as the annual sum of all contributions made by donor i in year t to the nonprofit organization. Relationship length ($Length_{it}$) is measured by the number of years the donor i has been member of the organization in year t . Donation frequency ($Frequency_{it}$) refers to the frequency with which donor i donates in year t . The information obtained from the data shows the different frequencies used: once a month; every two, three and four months; twice a year; and once a year. We focused on the four most frequent options (month, quarter, semester, and year) since the rest are marginally used by regular donors. We created dummy variables for the selected frequencies (i.e., $Monthly_{it}$, $Quarterly_{it}$, $Biyearly_{it}$, with yearly acting as the base category).

3.3. Estimation strategy and procedure

We developed a polynomial regression model to derive the impact of the relationship length on the donation amount, and to consider the moderating role of the frequency used to donate. The model that we estimated is represented in the following equation (Equation 1):

$$\begin{aligned}
 \ln(Amount_{it}) = & \alpha_0 + \beta_1 Length_{it} + \beta_2 Length_{it}^2 \\
 & + \beta_3 Monthly_{it} + \beta_4 Quarterly_{it} + \beta_5 Biyearly_{it} \\
 & + \beta_6 Length_{it} \times Monthly_{it} + \beta_7 Length_{it} \times Quarterly_{it} + \beta_8 Length_{it} \times Biyearly_{it} \\
 & + \beta_9 Length_{it}^2 \times Monthly_{it} + \beta_{10} Length_{it}^2 \times Quarterly_{it} + \\
 & + \beta_{11} Length_{it}^2 \times Biyearly_{it} + \beta_{12} Control_{it} + \varepsilon_{it}
 \end{aligned} \tag{1}$$

where $\ln(\text{Amount}_{it})$, our dependent variable, is the log-transformed (due to the skewed distribution) donation amount by donor i in year t ; Length_{it} is the number of years the donor i has been member in year t ; Length^2_{it} is the quadratic term of the number of years to capture the potential non-linear nature of the relationship with donation amounts (as predicted in H1); and Monthly_{it} , Quarterly_{it} and Biyearly_{it} are the dummy variables capturing the donation frequency by donor i in year t . In addition, $\text{Length}_{it} \times \text{Monthly}_{it}$, $\text{Length}_{it} \times \text{Quarterly}_{it}$ and $\text{Length}_{it} \times \text{Biyearly}_{it}$, as well as $\text{Length}^2_{it} \times \text{Monthly}_{it}$, $\text{Length}^2_{it} \times \text{Quarterly}_{it}$, and $\text{Length}^2_{it} \times \text{Biyearly}_{it}$ are the interaction terms that capture potential moderating effects between relationship length and donation frequencies; Control_{it} is a vector that contains a set of control variables, including some demographic characteristics, such as gender (Gender_{it}) or income (Income_{it}), or past behavioral factors, such as previous donor ($\text{Previous donor}_{it}$); and ε_{it} is the error term. The focus of this study is on the parameters β_1 and β_2 , which capture the main effects of the relationship length on the donation amount, and β_6 - β_{11} , which reflect the interactions between the relationship length and the frequency of donations.

To derive the parameters of interest, we applied panel data techniques using Stata 16. We ran a set of Ordinary Least Square (OLS) regression analyses. Because we needed to assume heteroscedasticity in our model (Stock and Watson, 2007), the OLS regression was performed by using the *regress* command and the *robust* option, since Stata by default assumes homoscedastic standard errors. We also checked the multicollinearity of the independent variables. An important assumption for multiple regression models is that independent variables are not perfectly multicollinear and that, when multicollinearity exists, standard errors can be inflated (Stock and Watson, 2007). We then calculated the ratio variance inflation factor (VIF) for each dependent variable in our study. This measure allowed us to check the reliability of our regression results and ensure that the variance of the coefficients was not excessively inflated due to multicollinearity in the model. We find that donation frequencies used in the model (i.e., monthly, quarterly, and bi-yearly), showed a VIF of between 1 and 2, and the experience's terms showed a VIF of between 9 and 10. These ratios thus indicated that each main independent variable is not highly correlated with the other predictors.

4. Estimation results

Applying a hierarchy approach, we estimated three models sequentially. Model 1 is the base model that analyzes the impact of the control variables. Model 2 adds to the previous model the main effect of relationship length and the direct effect of donation frequency. Finally, Model 3 considers the above effects and the interaction terms between length and frequency. This estimation approach allows us to determine if adding each set of variables improves the model. An overall F test shows that Model 2, compared to Model 1, significantly improves when adding main effects of the focal variables ($F[10, 30337] = 3451.89, p < .001$). In addition, in Model 3, when we introduce the interaction terms, the fit of the model improves significantly ($F[16, 30331] = 2287.61, p < .001$).

The estimation results of the full Model 3 appear in Table III. We find a strong support for the main effects in our model. The results reveal that relationship length has a negative effect on donation amount ($\beta_{\text{Length}} = -.058; p < .001$). We observe a positive sign for the quadratic term ($\beta_{\text{Length}^2} = .001; p < .001$), indicating that donors in the earlier years of the relationship donate more, but that these donations decrease over time and then increase again as members accumulate years of experience with the organization. This result provides support for the proposed U-shaped relationship between donation amount and relationship length in Hypothesis 1.

Turning our attention to donation frequency, we observe that individuals who donate more frequently contribute more ($\beta_{\text{Monthly}} = .607; p < .001; \beta_{\text{Quarterly}} = .395; p < .001; \beta_{\text{Biyearly}} = .234; p < .001$). In addition, the interaction terms between donation frequencies and relationship length show positive and significant signs for the linear term ($\beta_{\text{Length} \times \text{Monthly}} = .109; p < .001; \beta_{\text{Length} \times \text{Quarterly}} = .086; p < .001; \beta_{\text{Length} \times \text{Biyearly}} = .062; p < .001$) and negative signs for the quadratic term ($\beta_{\text{Length}^2 \times \text{Monthly}} = -.002; p < .001; \beta_{\text{Length}^2 \times \text{Quarterly}} = -.002; p < .001; \beta_{\text{Length}^2 \times \text{Biyearly}} = -.001; p < .001$), which contribute to flattening the U-shaped relationship found between relationship length and donation amount. This finding offers support to Hypothesis 2.

Regarding the effects of the set of control variables that we included in the model, the results show that individuals' sociodemographic characteristics influence the amounts contributed. Specifically, living in an urban area ($\beta = .626; p < .001$), as well as a higher level of income ($\beta = .666; p < .001$) or providing personal email as a contact channel ($\beta = .275; p < .001$), positively influence donations. However, female donors' contributions

tend to be lower ($\beta = -.061$; $p < .001$). Focusing on past behaviors that may cause some influence on subsequent behavior, the findings show that having been a previous occasional donor positively influences the donation amount ($\beta = .733$; $p < .001$).

<Insert Table III about here>

To check the robustness of these results, we ran an additional model. In our database, donors were not randomly assigned to the different donation frequencies. As this may potentially lead to self-selection, we re-estimated our main model and allowed the frequency to be endogenous (thus controlling for endogeneity problems). Additionally, to control for multicollinearity problems of independent variables, we proceeded by using the System GMM estimator with a two-step robust estimation. Given the likely influence of previous donations on current donations, this model also included the lag of the dependent variable ($\ln Amount_{it}$), capturing the donation amount provided by donor i in year $t-1$. Additionally, two post-estimation tests were also performed. First, the Hansen test, which allowed us to confirm that the model did not present problems of over-identification through generating a high number of instruments ($\text{Prob} > \chi^2 \geq .05$). Second, the Arellano and Bond autocorrelation test, which confirmed that the error terms were not serially correlated ($\text{Ar}(2) \text{ pr} > z > .05$) and thus controlled for autocorrelation problems in the performed model.

As shown in Table IV, the results also offer support for those in our main model, revealing that relationship length has a negative effect on donation amount ($\beta = -.033$; $p < .001$) and that donors in the earlier years of the relationship donate more, but that these donations decrease over time and then increase again as members accumulate years of experience with the organization. This latter effect, however, is significant only in the model without interactions (M2) ($\beta = .001$; $p < .001$). Furthermore, results also support the interaction effect between relationship length and donation frequency. Compared to a yearly frequency, higher frequencies contribute to flattening the U-shaped relationship found between relationship length and donation amount ($\beta_{\text{Quarterly} \times \text{Length}^2} = -.001$; $p < .05$; $\beta_{\text{Bi-yearly} \times \text{Length}^2} = -.001$; $p < .001$).

<Insert Table IV about here>

5. Discussion

5.1. Theoretical implications

This study contributes to recent research on services that create relevant work that responds to societal challenges, both by enhancing the active participation of the actors forming the entire service ecosystem (Finsterwalder *et al.*, 2021; Ostrom *et al.*, 2021) and by improving the well-being of the most vulnerable groups in society (Boenigk *et al.*, 2021; Rosenbaum *et al.*, 2017). As entities providing essential community services, nonprofits play an important role in this context, and obtaining sufficient economic resources has become critical to the fulfillment of their missions. The focus of the present study is on understanding the behavior of regular members over time, as well as how nonprofits can forge strong member relationships that enable fundraisers to obtain sustained financial support.

Our work extends and reconciles previous studies which have shown mixed results regarding the impact of relationship length on financial support provided by donors. Previous studies in nonprofit service settings have generally found a positive association between the length of time a member has been with the organization and their monetary contributions (Fang *et al.*, 2021; Khodakarami *et al.*, 2015; Ki and Oh, 2018; Verhaert and Van den Poel, 2012). Others, in contrast, find that in other service organizations, identification or satisfaction may be negatively related to relationship duration (Karjaluoto *et al.*, 2016; Raimondo *et al.*, 2008), suggesting that monetary donations might decrease over time due to a reduction in organizational commitment (Beck and Wilson, 2000; Sargeant *et al.*, 2006; Sargeant and Lee, 2004). Furthermore, this study is one of the first to provide a systematic and comprehensive investigation of the impact of relationship length on organization's performance in the short- and long-term. Prior research notes the importance of considering key forces affecting organizational commitment (i.e., affective and normative) when studying relationships between individuals and service providers (Bansal *et al.*, 2004). We have drawn from organizational commitment theories to propose that the relationship between donation amount and membership length is nonlinear, U-shaped, and based on the evolution of two central commitment dimensions: affective commitment, which decreases over time, and normative commitment, which increases over time.

This study therefore also contributes to the organizational commitment literature in service organizations (Conduit *et al.*, 2019; Fang *et al.*, 2021; O'Brien *et al.*, 2020), and especially in nonprofit settings, which have been under-represented in prior work (Anderson *et al.*, 2013; Ostrom *et al.*, 2015). It also contributes to research aimed at identifying relationship marketing activities that elicit the desired commitment and relationship behaviors from their membership (Gruen *et al.*, 2000). Indeed, our study suggests that service researchers should take a dynamic perspective on individuals' organizational commitment when assessing consumer or member behaviors over time. In doing so, our findings support our framework and demonstrate that the relationship between donations and relationship length is more complex than previously thought, since it evolves dynamically as a result of the confluence of two forces operating in opposite directions (affective vs. normative commitment). A distinctive feature of this study is the wide range of relationship lengths studied, with a minimum of zero years (members who have just registered as regular donors) and a maximum of 54 years. This range enabled us to overcome the potential limitations of previous studies that were only able to capture a few months or years after the donors became members of the organization.

Service research has also noted the need for a better understanding of the underlying mechanisms that affect the duration of the provider-customer relationship to develop effective strategies aimed at increasing retention rates and profitability in the long run (Verhoef *et al.*, 2002; Waters, 2008). This research extends knowledge on the role played by donation frequency in the relationship between donation amounts and relationship length. Our results suggest that the U-shaped, nonlinear relationship between donation amount and relationship length flattens with higher donation frequencies, which underscores the relevance of the frequency with which regular members provide their donations. A seemingly irrelevant question, such as whether to provide a \$120 donation yearly (one donation of \$120), quarterly (four donations of \$30), or monthly (12 donations of \$10) in fact represents a critical element affecting the evolution of the two dimensions of organizational commitment, ultimately impacting the amounts donated. As in other service settings, the number of interactions can present an opportunity to strengthen the relationships between customers and organizations (Polonsky and Sargeant, 2007). Our study thus contributes to a better understanding of the behavior of the regular donor portfolio over time and offers insights into the influence of potential factors that enable managers to achieve accuracy in their segmentation actions (Verhaert and Van den Poel,

2011). This work suggests that donation exchanges involve interactions among donors and service providers and may positively influence the development of the relationship between the donor and the organization, as well as the financial support over time.

Finally, and at a more general level, this study contributes to a better understanding of the donor portfolio and donor contributions over time, which represents the main and most stable source of economic resources for nonprofit service organizations (Development Initiatives, 2020; Drollinger, 2018). Effective management of the donor base is a major challenge for nonprofit organizations, and engaging regular members and increasing their commitment lies at the heart of any strategy that aims to cultivate and nurture the relationship with financial supporters (Weir and Hibbert, 2000; Sargeant *et al.*, 2006; Waters, 2008). The analysis of the forces influencing the building of long-term relationships represents an important area of research for services aimed at providing information about the development of nonprofit relationships with their financial supporters (Boenigk and Helmig, 2013; Drollinger, 2018; Fang *et al.*, 2021; Weir and Hibbert, 2000). Our study offers novel insights into the evolution of donation amounts over time, as well as the influence exerted both by the length of time that a donor has been a member of the organization and by the donation frequency. This study thus provides valuable knowledge about the effective management of the donor base.

5.2. Practical implications

In addition to acquiring the necessary funds to meet their objectives, fundraising managers need a stable donor portfolio that guarantees continuous revenues over time and is promoted by a high level of involvement in its activities, as well as by a strong organizational commitment (Hong and Yang, 2011). This study has important implications that can help fundraisers implement effective retention strategies for promoting the development of successful relationships with their regular supporters (Oh and Ki, 2019; Sargeant *et al.*, 2006). Our findings suggest an opportunity for nonprofit service organizations to leverage the time during which donors have been members of the organization to promote member engagement and enhance donations. Most organizations can easily perform the following three strategic actions: updating information from their donors (Weir and Hibbert, 2000), knowing how long their donors have been members, and periodically analyzing donor behavior within the organization (e.g., donation

frequency, additional contributions to other causes). Those responsible for managing relationship strategies need to rely on computerized database systems that enable them to collect large amounts of information about their members, as a data-rich information environment will improve accuracy in market segmentation (Bennett, 2006; Weir and Hibbert, 2000; Verhaert and Van den Poel, 2011). By controlling for relationship duration, it is possible to predict changes in donations over time and when the contributions of financial supporters will start to decrease, thus facilitating subsequent marketing decisions.

This study also identifies donation frequency as an observable behavior capable of influencing the degree of donors' involvement with the organization and its services. Donors receive largely intangible benefits from donating, which are difficult for them to evaluate (Sheth and Parvatiyar, 2000), therefore, increasing the perceived value that donors obtain from their donations becomes essential to the maintenance of stable financial support over time. Programs that promote multiple donations during the year and aim at increasing the payment schedule of their regular contributors (e.g., from yearly to monthly donation frequencies), or that promote member participation in other social causes or campaigns that cover emergency situations (e.g., environmental disasters or refugee crisis), can lead donors to perceive that they are helping others more (Atlas and Bartels, 2018) and develop a positive emotional disposition toward the organization (Conduit *et al.*, 2019; Faulkner *et al.*, 2016; Khodakarami *et al.*, 2015). Individuals who participate more actively in services provided by the organization are more likely to engage in other initiatives (O'Brien *et al.*, 2020), or even to increase their donations. If fundraising managers encourage donors in the earlier stages of the relationship to commit to more frequent support, this could help maintain a high level of affective commitment for a longer period. This affective commitment would later be complemented by normative commitment, in which factors such as a feeling of responsibility for organizational outcomes and loyalty to the organization predominate. Therefore, encouraging more frequent donor support early in the relationship could promote the continuity of substantial economic support for the organization.

Academic marketing and service literature recognizes that emotional experiences build stronger connections among consumers and service organizations (Conduit *et al.*, 2019; Karjaluoto *et al.*, 2016) and that encouraging members to take part in other activities within the organization might be a good way to form stronger relationships with them

(Brodie et al., 2011). Our study demonstrates that more frequent interactions with donors can strengthen the relationship with the organization and therefore the financial support that the organization receives. In an attempt to promote a stronger emotional attachment, fundraisers should involve donors, for example, through volunteering activities or annual events and campaigns, thus allowing donors to increase their identification with the organization (Karjaluoto *et al.*, 2016) and improve their understanding of its mission (Brodie *et al.*, 2011; Conduit *et al.*, 2019). To identify those potential donors willing to collaborate in other activities apart from their donations, fundraisers should also be able to profile and segment their members effectively so that their efforts capture those who are really interested in engaging in collaborative behaviors (Ashley *et al.*, 2011; O'Brien *et al.*, 2020). In this study we controlled for donor predisposition to provide contact information (i.e., email address), which is a behavior that managers can use to identify those who may be interested in participating in further activities within the organization.

6. Limitations and directions for future research

Our findings are subject to some limitations that offer the opportunity to expand knowledge in future research. First, the focus in this study has been on a single organization and its donor portfolio. This organization provides social services and employment support to disadvantaged groups through several social interventions. While in spirit this is similar to other nonprofit organizations, there can be differences in the specific causes supported. How the findings of this study apply to other nonprofit services organizations that support other goals (e.g., education or health) is an interesting avenue for further research. Second, we have argued that organizational commitment and its dimensions (affective and normative commitment) are important mechanisms that explain the relationship between donations and relationship length, but the lack of perceptual data has meant that we were not able to demonstrate the central role played by commitment. Future studies can investigate commitment levels over time, and their impact on donation behavior.

Third. In our study we assume that donors generally develop an affective attachment to an organization, and that promoting frequent donations and more active participation can lead to higher levels of commitment in all cases. However, some donors may seek to donate for the primary purpose of helping beneficiaries and are not willing to engage in

closer relationships with nonprofits (Bennett and Barkensjo, 2005; Parish and Holloway, 2010). More research is needed to resolve whether the effects presented in this study vary across different levels of member willingness to form strong relationships with nonprofit organizations. Finally, the focus of this study is on regular members, which is an important aspect of our work, as regular donors are those who provide stable funding for nonprofit organizations. However, future studies could investigate whether the effects found in our study also apply to occasional donors. Do occasional donors' donation amounts increase or decrease over time? Do these effects depend on the frequency with which they donate to the charity? Certainly, these questions warrant further research.

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Figures

Figure 1 Conceptual model

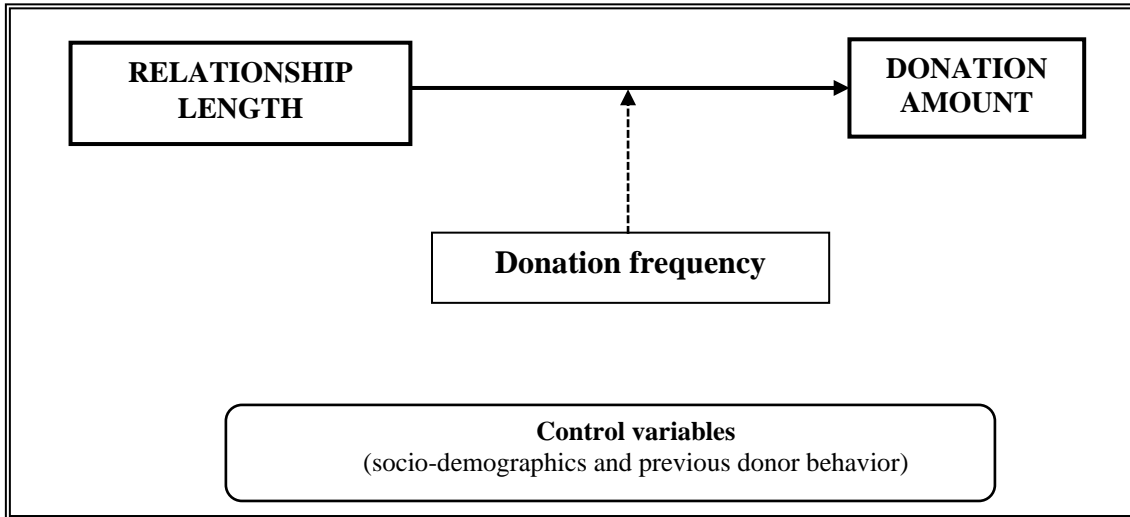
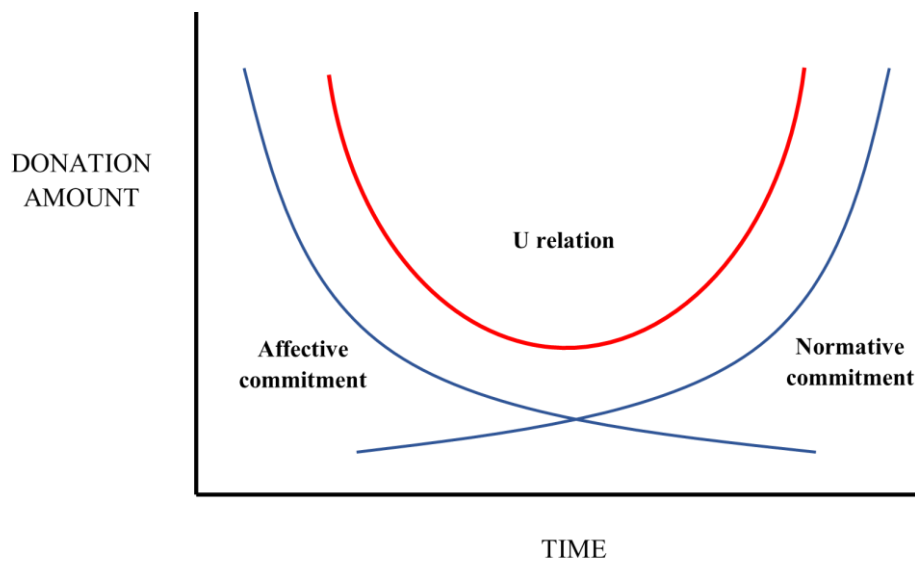


Figure 2 Evolution of organizational commitment



Tables

Table 1 Variable operationalization

Variable	Operationalization
Donation amount	Total amount donated by donor i in year t . We include the log-transformed value of this variable in our models.
Relationship length	Number of years of experience of donor i with the organization in year t .
Donation frequency	Donation frequency by donor i in year t measured through three dummy variables: monthly (1 if the donation is monthly; 0 otherwise), quarterly (1 if the donation is quarterly; 0 otherwise), and biyearly (1 if the donation is biyearly; 0 otherwise). Yearly frequency acts as the category base.
Residential area	Dummy variable: 1 if donor i lives in an urban area (0 if rural) in year t .
Gender	Dummy variable: 1 if donor i is female (0 if male).
Email	Dummy variable: 1 if donor i provides an email address as a contact channel to the organization in year t (0 if other type of contact address).
Income	Disposable income per capita in the residential area of donor i in year t . We include the log-transformed value of this variable in our models.
Previous donor	Dummy variable that takes the value 1 if donor i was a previous occasional donor to the organization, and 0 otherwise.

Table II Descriptive statistics and correlations

	Variable	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10	11
Dependent variable	1. Amount	220.18	385.59	1										
Relationship length	2. Length	14.83	12.15	-0.51	1									
	3. Length2	367.58	530.63	-0.52	0.95	1								
Donation frequency	4. Monthly	0.24	0.43	0.41	-0.35	-0.29	1							
	5. Quarterly	0.22	0.42	0.20	-0.01	-0.07	-0.33	1						
	6. Biyearly	0.12	0.32	0.01	<i>0.01</i>	-0.01	-0.22	-0.21	1					
Control variables	7. Urban	0.73	0.44	0.52	-0.47	-0.51	0.21	0.16	0.01	1				
	8. Female	0.45	0.49	0.04	-0.19	-0.20	0.02	<i>-0.01</i>	-0.01	0.05	1			
	9. Email	0.28	0.45	0.33	-0.38	-0.31	0.27	-0.01	0.00	0.26	-0.07	1		
	10. Income	13084.75	3574.66	0.28	-0.16	-0.18	0.06	0.05	0.02	0.31	<i>0.02</i>	0.13	1	
	11. Previous donor	0.09	0.28	0.19	-0.02	-0.02	0.04	0.02	<i>0.00</i>	0.09	-0.02	0.01	0.04	1

Note: Non-significant correlations are italicized.

Table III Estimation results

Dependent variable: ln(Amount _{it})	Controls M1	Main effects M2	Interaction effects M3
Intercept (α_0)	-3.328***(.274)	-2.995***(.232)	-2.284***(.230)
Length		-0.007***(.002)	-0.058***(.002)
Length2		0.001***(.000)	0.001***(.000)
Donation frequency			
Monthly _{it}		1.375***(.017)	0.607***(.032)
Quarterly _{it}		1.109***(.016)	0.395***(.037)
Biyearly _{it}		0.744***(.020)	0.234***(.043)
Interactions			
Monthly _{it} * Length _{it}			0.109***(.005)
Quarterly _{it} * Length _{it}			0.086***(.005)
Biyearly _{it} * Length _{it}			0.062***(.005)
Monthly _{it} * Length2 _{it}			-0.002***(.000)
Quarterly _{it} * Length2 _{it}			-0.002***(.000)
Biyearly _{it} * Length2 _{it}			-0.001***(.000)
Controls			
Urban _{it}	1.466***(.018)	0.679***(.017)	0.626***(.017)
Female _{it}	0.093***(.014)	-0.050***(.012)	-0.061***(.012)
Email _{it}	0.687***(.016)	0.257***(.014)	0.275***(.014)
Income _{it}	0.684***(.029)	0.688***(.025)	0.666***(.024)
Previous donor _{it}	0.793***(.025)	0.761***(.021)	0.733***(.021)
R²	.3416	.5322	.5468
F test			
Change in R ²		.1907	.0146
F statistics	F (5, 30342)= 3148.05	F (10, 30337)= 3451.89	F (16, 30331)= 2287.61
Pr > F		.000***	.000***

Note: Significant parameters: ***p < .001. Sample size: 6137 regular donors.