Digitalisation of Cash Transactions in Non-Profit Institutions: A Case Study of E-Taca System Implementations in Poland

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***Abstract*— The ongoing digitalisation of cash transactions in Poland and the dynamic growth of card payments - has also begun to encompass entities traditionally operating within cash transactions, including non-profit institutions. A particularly noteworthy example of this transformation is the deployment, in Polish parishes, of so-called e-taca systems, donation kiosks and payment terminals that allow worshippers to make voluntary offerings in a cashless manner. The aim of this article is to analyse the economic and organisational aspects of the digitalisation of cash transactions in Polish parishes as an example of non-profit institutions. The research approach is applied a case study of selected parishes constructed on the basis of publicly available sources. The theoretical framework draws on the economics of religion, theories of non-profit organisations, and models of technology acceptance and innovation diffusion. The qualitative analysis covers four units differing in scale, location and implementation model. Three principal models of transformation are identified - complementary, substitutive and formal-transactional - together with shared decision-making motivations: adaptation to the payment habits of worshippers, the pursuit of financial transparency, and the reduction of cash-handling costs. Directions for further research are outlined, aimed at quantifying the economic effects of the implementations observed.**

Keywords— digitalization of cash transactions, cashless payments, non-profit organizations, electronic collection plate, economics of religion, digital fundraising.

I. INTRODUCTION

The digitalisation of the payment system is one of the most profound transformations of contemporary developed economies. In Poland, this process is unfolding with particular intensity: the share of cashless transactions in the total number of payment operations has grown markedly over the past decade, and the acceptance infrastructure for cards and mobile payments has come to cover virtually all segments of retail transactions. According to a survey of the payment habits of Poles commissioned by Narodowy Bank Polski (the National Bank of Poland) in 2023, 86.5% of respondents had used payment cards in the twelve months preceding the survey, while in the diary-based component of the study the share of card payments was 57.8% by number of transactions and 71.1% by value. This is accompanied by the intensive development of the domestic mobile payment standard BLIK, whose popularity is growing more rapidly than that of any other instrument analysed (Narodowy Bank Polski, 2024a).

This transformation is not confined to the commercial sphere. It is gradually extending to public-sector entities and social organisations as well, including religious institutions, which for centuries operated almost exclusively in cash. In the Polish setting, a particular manifestation of this phenomenon is the deployment in parishes of systems referred to as e-taca, ofiaromat or datkomat - devices enabling worshippers to make voluntary offerings using payment cards, smartphones, smartwatches and BLIK. The first such device was installed in 2019 at the Church of St Maximilian Maria Kolbe in Kraków-Mistrzejowice (eKAI, 2019), and in the following years the solution spread to further Polish parishes, encompassing both large pilgrimage sanctuaries and small urban communities.

This phenomenon is cognitively interesting for several reasons. First, religious institutions are among the most stable and traditionalist social organisations, and their readiness to adopt payment technologies makes it possible to observe the mechanisms of innovation diffusion under conditions not driven by profit (Rogers, 2003). Second, the voluntary nature of offerings made in a liturgical context creates specific behavioural conditions that have been analysed in the economic literature in relation to, inter alia, the effects of anonymity, social pressure and choice of payment instrument (Soetevent,

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2005; 2011). Third, these implementations take place within a context of systemic support for cashless infrastructure, in particular the Polska Bezgotówkowa programme, whose beneficiaries may also include parishes (Opoka, 2020). Fourth, the phenomenon coincides with the gradual secularisation observed in Poland and the decline in regular religious practice - according to a 2024 report by the Centre for Public Opinion Research (CBOS), the share of people attending Mass weekly has reached the lowest level recorded in the history of CBOS measurements (CBOS, 2024).

The aim of this article is to analyse the economic and organisational aspects of the digitalisation of cash transactions in Polish parishes as an example of non-profit institutions. The following research questions are posed: (1) what models of e-taca system implementation operate in Polish parishes? (2) what motivations underlie the decision to adopt these solutions in the absence of a profit motive? (3) what organisational consequences are associated with the digitalisation of cash transactions in parish units? The article does not attempt to quantify the financial effects of the implementations - such data are not publicly available - but instead focuses on the "soft" aspects of implementation: communication, organisation of the process, technological models, declared motivations and acceptance on the part of donors.

The structure of the article is as follows. Section two presents a literature review covering the economics of religion, theories of non-profit organisations, the digitalisation of payments, digital fundraising and technology acceptance models. Section three describes the methodology of the study, based on a multiple case study. Section four presents the results of the analysis of four selected cases and their comparison. Section five contains a discussion of the results in the light of the literature, and section six sets out the conclusions, limitations and directions for further research.

II. Literature Review

A. Non-profit institutions and the economics of religion

Religious organisations constitute one of the oldest and most widely diffused forms of non-profit institutions. The subdiscipline known as the economics of religion has been developing as a distinct field of research since the pioneering work of the 1970s. The classical model of Azzi and Ehrenberg (1975), published in the Journal of Political Economy, was among the first to apply the framework of microeconomic utility maximisation to the analysis of participation in religious practices, taking into account the salvation motive and the allocation of time between secular and religious activities.

Fundamental importance attaches to the work of Laurence R. Iannaccone, who proposed treating religious organisations as providers of club goods grappling with the free-rider problem (Iannaccone, 1992). In a synthetic literature review, Iannaccone (1998) drew attention to the role of voluntary offerings as a mechanism for signalling commitment to the group, and to the specificity of the "religious market", in which communities compete for the participation and financial support of the faithful. A contemporary development of this perspective is the work of McCleary and Barro (2006), in which the authors systematically analyse the two-way interaction between religion and the economy: religiosity as a function of economic development and the influence of religiosity on individual characteristics (work ethic, honesty, thrift) and, consequently, on economic outcomes.

Three theoretical threads are particularly relevant from the perspective of this article. First, the conception of the voluntary contribution as a mechanism for financing club goods implies that donations are sensitive to transactional barriers - any obstacles in the technology of making an offering may raise its execution costs and reduce the level of contributions. Second, the classical framework of the economics of religion treats the choice of how to support the community as part of a rational individual decision-making process, taking into account both transaction costs and intangible factors (reputation, social pressure). Third, dynamic changes in religiosity at the aggregate level - in the Polish case signalled by CBOS surveys documenting a progressive decline in declarations of faith and in the frequency of religious practice, most pronounced among young people and residents of large cities (CBOS, 2024) - translate into the structure and dynamics of parish revenues, thereby altering the context of decisions about the adoption of new payment instruments.

In the Polish literature, reflection on the economic dimension of the functioning of the Church remains relatively modest and is concentrated mainly on legal and administrative issues. There is a lack of systematic empirical research on the structure of parish financing - this is due in part to the absence of a public financial reporting obligation on units of the Roman Catholic Church in Poland, and in part to the methodological difficulties of data collection. This makes it all the more important to analyse materials produced by the parishes themselves, by trade press and by institutions monitoring religiosity (including the Institute for Catholic Church Statistics and CBOS).

B. Theories of non-profit organisations

The classical theoretical literature on non-profit organisations provides interpretive frameworks for analysing their technological behaviour. The seminal work of Hansmann (1980), published in the Yale Law Journal, argues that the existence of non-profit organisations is a rational response to contract failure - situations in which consumers or donors are unable to assess the quality of the service provided. The "non-distribution constraint" introduced by Hansmann constitutes an institutional safeguard for stakeholder trust, since it precludes the private appropriation of financial surpluses. In the case of religious organisations, this mechanism operates under conditions of particularly strong information asymmetry between donors (the faithful) and managers (clergy), which increases the importance of financial transparency.

The cross-country analysis of Salamon and Anheier (1998) proposes a "social origins theory" of the non-profit sector, pointing to the role of historical, cultural and political conditions in shaping its size and structure. In their typology, Poland - like other countries of Central and Eastern Europe - is classified as a representative of an intermediate model in which the non-profit sector remains relatively small but is strongly embedded in religious and traditional structures. Anheier (2014), in a synthetic monograph on the management of non-profit organisations, emphasises that religious organisations constitute a distinctive segment of the third sector, combining doctrinal, communal and economic functions, which calls for an integrated analytical approach.

From the standpoint of this article, Hansmann's theoretical framework is particularly useful, as it allows investments in transparency (e.g., public reporting of the purposes of contributions, segmentation of donations) to be interpreted as institutional signals reducing information asymmetry. The perspective of Salamon and Anheier, in turn, draws attention to structural conditions for the adoption of innovations, such as the role of the state (the Polska Bezgotówkowa programme), banks and trade organisations (the Polish Bank Association, the Polska Bezgotówkowa Foundation) as providers of infrastructure supporting the digitalisation of the non-profit sector.

C. Digitalisation of payments in Poland and worldwide

Poland is among the European countries with the most dynamic development of cashless payments. According to the Assessment of the Functioning of the Polish Payment System for the first half of 2024 prepared by Narodowy Bank Polski, the share of cashless payments in the number of transactions carried out in 2023 reached 65%, and 22% of Poles declared that they made cash payments only in exceptional situations (Narodowy Bank Polski, 2024b). At the same time, generational differences in payment habits are levelling out: although older people and residents of smaller localities remain more strongly attached to cash, the dynamics of change point to a durable downward trend in its role in retail transactions.

A systemic instrument supporting this transformation is the Non-Cash Transactions Support Programme "Polska Bezgotówkowa", launched in 2017. The programme, coordinated by the Polska Bezgotówkowa Foundation established by the Polish Bank Association, finances the provision of free-of-charge payment terminals to entrepreneurs, public institutions and other entities accepting payments - including foundations, associations, cultural institutions and parishes. According to information published in 2024 by the Polska Bezgotówkowa Foundation, over seven years of operation more than half a million entrepreneurs and institutions have joined the initiative, contributing to the doubling of the network of cashless payment acceptance in Poland (Fundacja Polska Bezgotówkowa, 2024).

In the international context, the process of digitalising cash transactions has also gained particular momentum. The COVID-19 pandemic became a catalyst for the accelerated adoption of contactless and mobile payments, both on the consumer side and among entities accepting payments. Although the dynamics of this change are global, its pace and depth differ between countries; in some economies, such as Sweden, the prospect of the practical disappearance of cash transactions in retail trade is being discussed (Sveriges Riksbank, 2025).

D. Digital fundraising and electronic forms of donations

The digital transformation of fundraising processes by non-profit organisations is a growing area of research at the interface of economics, marketing and management. The classical literature review by Bekkers and Wiepking (2011) identifies eight mechanisms driving charitable giving: awareness of need, solicitation, costs and benefits, altruism, reputation, psychological benefits, values, and efficacy. From the perspective of digitalisation, the mechanisms of "costs and benefits" and "solicitation" are particularly relevant: digitalisation modifies both sides of this equation. On the one hand, it lowers the transactional costs of making a donation (no need to carry cash, the possibility of contributing at any time); on the other, it changes the form and character of the solicitation (individualised messages, the possibility of choosing a purpose, automated acknowledgements).

A classical theoretical contribution to the analysis of motives for charitable giving was made by Andreoni (1990) on the "warm-glow" effect, in which the author formally models impure altruism: a donor derives satisfaction not only from the effect of the donation, but also from the very act of giving. In the context of the digitalisation of the offering, a key question is the extent to which the change of medium (from banknote to contactless card transaction) modifies the intensity of the "warm-glow" effect - the sense of the act of giving may be weaker in the case of an electronic transaction owing to the absence of physical parting with money.

Particularly important for this article are studies on the impact of the payment instrument on the level of donations. Soetevent (2005), in a field experiment conducted in thirty churches in the Netherlands, showed that the transparency of the collection basket influences the structure of donations: under conditions of increased visibility, the average value of contributions rises. In a subsequent study, Soetevent (2011) examined the influence of the choice of payment instrument on donations in the context of door-to-door fundraising drives. He showed that when cash is replaced by debit card payment, participation falls drastically, whereas among those who nevertheless make a donation, the average value of the contribution is higher. These findings have direct implications for the design of e-taca systems: an optimal solution requires the coexistence of both channels (cash and cashless) so as not to exclude any group of potential donors.

More broadly, the literature emphasises that younger generations increasingly prefer digital donation channels, and a growing share of consumers operates virtually without cash in their wallets. This creates the need for public-benefit organisations to adapt their fundraising channels in order not to lose systematic contact with the youngest age group of potential donors.

E. Models of technology acceptance and innovation diffusion

The adoption of new payment technologies by religious organisations and, at the individual level, by the faithful, can be analysed within the theoretical frameworks of technology acceptance models. The Technology Acceptance Model (TAM) proposed by Davis (1989) identifies two key determinants of the intention to use a technology: perceived usefulness and perceived ease of use. In the context of e-taca, perceived usefulness corresponds to a worshipper's belief that the cashless form of making an offering is functionally valuable (e.g., convenient, transparent, adapted to a contemporary lifestyle), while perceived ease of use concerns the intuitiveness of operating the device and the absence of technical barriers.

An extension of TAM is the Unified Theory of Acceptance and Use of Technology (UTAUT), developed by Venkatesh et al. (2003). The UTAUT model distinguishes four main determinants of the intention to use technology: performance expectancy, effort expectancy, social influence, and facilitating conditions. From the perspective of the adoption of e-taca systems in the parish context, the third construct - social influence - is of particular importance, since the liturgical and communal specificity of making an offering activates strong reference-group mechanisms.

A classical theoretical framework for analysing the spread of innovations within a population is provided by Rogers (2003). Rogers distinguishes five characteristics of an innovation that affect the rate of adoption: relative advantage, compatibility with existing values and experience, complexity, trialability, and observability. In the case of e-taca, the construct of compatibility proves particularly critical: the new technology must be interpreted as consistent with the liturgical and cultural dimension of the act of making an offering; otherwise, symbolic barriers arise that weaken the readiness for adoption. The aforementioned work of Davis (1989) and the UTAUT model of Venkatesh et al. (2003) have been repeatedly tested in the context of the adoption of mobile and cashless payments, including contactless payments based on Near Field Communication technology, which confirms their interpretive value also in the case of cash transactions in the non-profit sector.

In the Polish literature there is a lack of systematic scholarly studies on payment-technology implementations in parishes. The empirical material is dispersed mainly across religious journalism, the trade press, and communiqués of dioceses and parishes. This creates the need for an in-depth qualitative analysis.

III. Methodology

A. Multiple case study - nature, selection and sources

The method of multiple case study in the classical formulation of Yin (2018) was applied. This approach is particularly suitable for analysing contemporary phenomena embedded in their real-world context, where the boundary between the phenomenon and its context is not clearly drawn and the researcher does not exercise control over the variables. Cases were selected purposively, in accordance with the principle of maximum variation sampling. The selection criteria were: (a) variation in the scale of the unit - from small urban parishes to large pilgrimage sanctuaries; (b) geographical variation - covering different dioceses and regions of the country; (c) variation in implementation models - from a supplementary role of the donation kiosk to the radical replacement of the traditional collection plate; (d) the availability of public sources of information on the implementation. On the basis of these criteria, four units were identified:

Parish of St Maximilian Maria Kolbe in Kraków-Mistrzejowice - the pioneering case of the first donation kiosk implementation in Poland.

Parish of the Blessed Virgin Mary, Queen of Poland in Gorzów Wielkopolski - an example of a recent implementation with multiple contribution purposes.

Parish of the Holy Name of Jesus in Poznań - a radical example of abandoning the traditional cash collection plate.

Sanctuary of Our Lady of Licheń - an example of a large pilgrimage institution.

The analysis draws on publicly available, externally verifiable sources: official websites of parishes and dioceses, press releases of the eKAI agency (Catholic News Agency), articles in nationwide and trade media (including Bankier.pl, Głos Wielkopolski, Eska.pl, Deon.pl, opoka.org.pl), trade publications of the payment sector (cashless.pl, prnews.pl, bank.pl), websites of providers of technological solutions, reports of Narodowy Bank Polski, and information from the Polska Bezgotówkowa Foundation. The analysis focuses on five dimensions: (i) the technological model of the implementation; (ii) the communication of the implementation to the faithful; (iii) the declared decision-making motivations; (iv) the organisation of the process (structure of contribution purposes, manner of reporting); (v) the reactions of the parish community recorded in the available sources.

IV. Results

A. Parish of St Maximilian Maria Kolbe in Kraków-Mistrzejowice

The parish in Mistrzejowice is the pioneering case of the implementation of an e-taca system in Poland. The first device of this type was launched in 2019 in the vestibule of the parish church, in cooperation with the Economic Office of the Archdiocese of Kraków and the company First Data Polska (now Fiserv Polska) (eKAI, 2019; mycompanypolska, 2020). The project was approved by the then Metropolitan Archbishop of Kraków, Marek Jędraszewski, and was presented during the deanery congregations of the archdiocesan clergy. In parallel, the parish joined the Polska Bezgotówkowa programme, installing in the parish office a payment terminal enabling cashless settlement of offerings when commissioning Mass intentions, weddings, baptisms and funerals (LoveKraków, 2019).

From the perspective of the implementation model, what is significant is the two-channel character of the solution: the donation kiosk in the vestibule serves spontaneous offerings made by worshippers during their visit to the church, while the terminal in the office handles formal administrative transactions. In statements by clergy quoted in communiqués of the Archdiocese of Kraków, two motivational threads were emphasised. The first concerned adaptation to the changing payment habits of worshippers - the terminal was framed as “a facility, an additional option, and not a compulsion” (eKAI, 2019). The second invoked the financial transparency of the parish and a willingness to meet the needs of worshippers who understand the needs of the Church and wish to support it financially. Communication therefore emphasised the complementary nature of the solution vis-à-vis the traditional cash collection plate, rather than any replacement function.

B. Parish of the Blessed Virgin Mary, Queen of Poland in Gorzów Wielkopolski

The second case analysed is the Parish of the Blessed Virgin Mary, Queen of Poland in Gorzów Wielkopolski, in which a donation kiosk was installed on 21 December 2024 by the entrance to the sacristy. The deployed device consists of a touch tablet and an Ingenico Lane 3000 payment terminal serviced by PolCard Fiserv (Parafia NMP Królowej Polski w Gorzowie Wielkopolskim, n.d.). It accepts contactless, chip and magnetic-stripe cards, BLIK and NFC devices (phones, smartwatches). Notably, the interface of the device supports six languages: Polish, English, Spanish, Ukrainian, German and French - reflecting both the heterogeneous demographic structure of the worshippers and the potential presence of tourists and pilgrims.

The architecture of the process is based on three steps: selection of the contribution purpose, selection of the amount (predefined tiles of PLN 10, 20, 30, 40, 50 or 100, or an arbitrary amount), and authorisation of the transaction. From the perspective of management studies, the segmentation of contribution purposes is particularly noteworthy: the parish enables worshippers to direct offerings to six distinct areas: “Church and Parish”, Sanctuary of St Veronica Giuliani, “Renovations”, “Children and Youth Ministry”, Caritas, and “Ministry”. Such segmentation enables donors to make a conscious choice as to the destination of their funds, which in the digital fundraising literature is linked to the strengthening of the sense of efficacy of the donation - one of the mechanisms identified by Bekkers and Wiepking (2011). From a managerial standpoint, this solution allows the parish to raise funds precisely for specific needs and subsequently to account to the community for the realisation of the stated objectives.

C. Parish of the Holy Name of Jesus in Poznań

The case of the Parish of the Holy Name of Jesus in Poznań, brought into being by ecclesiastical authority through a decree of the Metropolitan Archbishop of Poznań of 18 August 2022 (Archidiecezja Poznańska, 2022), represents the most radical model of the transformation of cash transactions among the units analysed. The parish priest, Fr Radosław Rakowski, publicly announced the abandonment of the traditional collection plate gathered during Mass (Polska Agencja Prasowa, 2024), encouraging worshippers to support the parish through standing orders to a bank account and through payments via the donation kiosk located at the entrance to the church (Bankier.pl, 2023; WP Finanse, 2023; Eska Poznań, 2023). Unlike the other cases analysed, in the Parish of the Holy Name of Jesus the cashless mechanism is dominant rather than supplementary.

The parish priest’s communication explicitly linked the decision to two values: financial transparency and the reduction of stigmatisation of worshippers who, for various reasons, do not make cash offerings. The parish regularly publishes information on the state of its finances, the amounts collected and the purposes for which the funds are used, and the parish priest himself has publicly declared the level of his remuneration (Eska, 2025). The decision to abandon the traditional collection plate was preceded by the building of an organisational culture based on trust - the offering basket was initially passed from hand to hand and was then gradually replaced by transfers and the donation kiosk.

In 2024 the parish priest also decided to abandon the traditional form of the Christmas pastoral visit (kolęda), stressing that the direct bond between the pastor and the worshippers should function throughout the year rather than being concentrated in a time-limited custom culturally associated with the handing-over of offerings in envelopes (o2.pl, 2024). From a managerial perspective, this case may be interpreted as an attempt to move away from culturally entrenched forms of fundraising in favour of a model based on regular standing orders - which in the terminology of digital fundraising corresponds to the concept of “regular giving”, regarded as a more predictable and stable source of financing than one-off offerings.

D. Sanctuary of Our Lady of Licheń

The last case analysed is the Sanctuary of Our Lady of Licheń in Licheń Stary, run by the Congregation of Marian Fathers. The Basilica of Licheń, one of the largest churches in Poland and an important pilgrimage centre, has deployed donation kiosks along the lines of other parishes (Głos Wielkopolski, 2025). According to the statement of the custodian of the sanctuary, Fr Sławomir Homoncik, quoted in this source, the installation of the devices was a response to repeated requests from pilgrims who increasingly rarely have cash with them during their visit. The configuration of the device includes a standard terminal and a touchscreen with predefined amounts (PLN 10, 20, 30, 50, 100, 200) together with an “other amount” option, and the system accepts Mastercard and Visa cards.

The specific character of a pilgrimage sanctuary introduces an additional dimension of analysis that is absent in the case of ordinary parishes. The Basilica of Licheń - as the cited custodian emphasises - was built from the small offerings of many worshippers. The decision to deploy donation kiosks therefore fits into a long tradition of dispersed, voluntary financing, while adapting the technology of this process to the contemporary payment preferences of pilgrims. The scale of the institution and the high turnover of visitors mean that the transactional barrier associated with the need to have cash on hand has potentially greater significance in this case than in a typical local parish.

E. Comparison of cases

A comparative analysis of the four units allows several structural findings to be formulated. Three principal models of implementation are identified:

a. Supplementary (complementary) model - in which the e-taca or donation kiosk functions alongside the traditional cash collection plate; represented by the parish in Mistrzejowice, the parish in Gorzów Wielkopolski, and the Sanctuary of Licheń. In this model, the clergy emphasise the complementary nature of the solution and its additional, non-mandatory character vis-à-vis the worshippers.
b. Dominant (substitutive) model - in which the traditional collection plate is replaced by standing orders and the donation kiosk; represented by the Parish of the Holy Name of Jesus in Poznań. It requires a deeper transformation of organisational culture and strong communication towards the community.
c. Formal-transactional model - in which a payment terminal is placed in the parish office and serves the handling of offerings for sacraments and Mass intentions (the parish in Mistrzejowice).

The common denominator of all the implementations analysed is the motivation linked to adaptation to the payment habits of worshippers, in particular to the growing share of people who do not carry cash. A second recurrent motive is financial transparency, with its weight most pronounced in the case of the Parish of the Holy Name of Jesus. All the units analysed make use of infrastructure supplied by external entities - companies specialising in e-taca solutions or acquirers participating in the Polska Bezgotówkowa programme. This points to the important role of providers of technological solutions as institutional intermediaries enabling the digitalisation of transactions in the religious sector. Table 1 synthesises the comparative features of the cases analysed.

TABLE 1. COMPARATIVE SUMMARY OF THE ANALYSED CASES

Dimension	Mistrzejowice	Gorzów Wlkp.	Poznań	Licheń
Year of implementation	2019	2024	2022/2023	2025
Scale	Large urban parish	Medium urban parish	New, small urban parish	National sanctuary
Implementation model	Complementary and Formal-transactional	Complementary	Substitutive	Complementary
Location of device	Vestibule + parish office	By the sacristy	Entrance to the chapel	By the basilica entrance
Segmentation of contribution purposes	General	Six purposes	Project-based purposes	General
Communication emphasis	Adaptation to worshippers	Multilingualism, segmentation	Transparency, reduction of stigmatisation	Pilgrims' requests

Source: own elaboration based.

V. DISCUSSION

The results of the analysis fit into the theoretical frameworks of the economics of religion, the theory of non-profit organisations, and the technology acceptance literature. First, the observed implementation models confirm the intuition arising from the work of Soetevent (2005; 2011) on the complex character of the relationship between the payment instrument and the level of voluntary contributions. Soetevent's (2011) experiment demonstrated that the substitutive (rather than complementary) introduction of card payments leads to a drastic decline in participation, which serves as a warning against the precipitate withdrawal of cash options. In this light, the complementary model dominant in Polish parishes - maintaining the coexistence of the traditional collection plate and the donation kiosk - appears to be a more cautious solution and one better suited to the heterogeneous demographic structure of parish communities. The radical model of the Parish of the Holy Name of Jesus in Poznań should be interpreted as a specific case: the unit is a relatively new parish, erected in 2022 (Archidiecezja Poznańska, 2022), with a demography presumably concentrated in a younger and more banked population, which explains the readiness to take the risk of a substitutive strategy.

Second, the motivation linked to financial transparency, strongly present in the communication of the Parish of the Holy Name of Jesus, fits into the classical framework of Hansmann's (1980) theory regarding the role of the non-distribution constraint and the signalling function of non-profit organisations. In the case of Roman Catholic parishes in Poland - institutions which in recent years have faced growing public criticism connected, among other things, with financial opacity - signalling transparency through the digitalisation of cash flows may constitute an important element of a strategy for rebuilding social trust. From the perspective of the economics of religion in the formulation of Iannaccone (1992; 1998) and McCleary and Barro (2006), this may be interpreted as signalling credibility in the religious market, in which communities compete not only for participation but also for repeated financial support. This competition acquires particular significance under the conditions of progressing secularisation documented by CBOS (2024).

Third, the segmentation of contribution purposes observed most clearly in the case of the parish in Gorzów Wielkopolski has important theoretical implications. Within the framework of the eight mechanisms of Bekkers and Wiepking (2011), the choice of the purpose of a donation activates the "efficacy" mechanism - the sense that the gift genuinely contributes to a specific outcome - and the "values" mechanism, by enabling donors to allocate funds in accordance with their individual axiological system. The classical "warm-glow" model of Andreoni (1990) further suggests that the emotional component of the act of giving may be reinforced by the precise targeting of the donation. From a managerial perspective, such a construction may operate in two directions: it increases donor satisfaction and, potentially, the aggregate sum of donations, while at the same time imposing on the manager an obligation to account scrupulously for the use of the funds assigned to particular purposes.

Fourth, the implementations analysed reveal interesting paradoxes. On the one hand, e-taca lowers the individual transactional barrier and potentially increases the participation of persons without cash; on the other, it deprives the act of making an offering of its ritual social visibility, which in the classical liturgical context performed a function reinforcing the contribution norm (peer effect). Soetevent (2005) demonstrated empirically that the visibility of the offering influences the structure and value of donations; digitalisation may therefore result in two opposing effects: an increase in participation owing to the reduction of barriers, on the one hand, and a change in structure and a potential decline in the effect of social imitation, on the other. The net outcome of these effects is not a priori unambiguous and requires empirical verification in Polish conditions.

Fifth, the theoretical frameworks of TAM (Davis, 1989) and UTAUT (Venkatesh et al., 2003) suggest that the acceptance of e-taca by worshippers will be a function of four factors: perceived usefulness (does the solution facilitate the making of an offering?), perceived ease of use (is its operation intuitive?), social influence (are other members of the community using it?), and facilitating conditions (does the infrastructure exist?). From the perspective of Rogers' (2003) diffusion of innovations theory, the construct of compatibility is of critical importance - whether the solution is perceived as consistent with the values and experience of the community. In the case of Polish parishes, this compatibility is reinforced by the placement of the devices (sacred aesthetics, location in the vestibule or by the sacristy) and by communicative distancing from a narrative of "commercialisation". Providers of technological solutions explicitly signal this compatibility by designing donation kiosks in a form that alludes to a pulpit or a kneeler.

Sixth, a key role in the diffusion of e-taca solutions is played by institutional systemic support. The Polska Bezgotówkowa programme, which finances terminals and transaction costs for the first 12 months, significantly lowers the entry barrier for parishes - in particular smaller ones, for which the fixed costs of installing a terminal might otherwise be disproportionately high. From the perspective of Salamon and Anheier's (1998) theory, such systemic infrastructural support is a manifestation of the model of "interdependence" between the state, the commercial sector and non-profit organisations, characteristic of the countries of Central and Eastern Europe. In this sense, the digitalisation of cash transactions in the religious sector is functionally linked to the public policy of supporting cashless transactions (Narodowy Bank Polski, 2024b), and its dynamics reflect both the preferences of parishes themselves and the strategic decisions of the payment-services market.

VI. Conclusions

A. Summary

This article has attempted a systematic analysis of the phenomenon of the digitalisation of cash transactions in Polish parishes as an example of non-profit institutions. The analysis of four diverse cases indicates that this process currently unfolds chiefly along the lines of the complementary model, in which the e-taca or donation kiosk operates alongside the traditional cash collection plate, and only incidentally along the lines of the substitutive model, in which the traditional form is supplanted. The common motivations underlying implementation decisions are: adaptation to the changing payment habits of worshippers, the pursuit of greater financial transparency, and the reduction of cash-handling costs. The Polska Bezgotówkowa programme plays an important systemic role, significantly lowering the financial barrier to entry for parishes.

From a theoretical perspective, the digitalisation of cash transactions in parishes constitutes an interesting case of the diffusion of technological innovation in organisations not motivated by profit (Rogers, 2003), operating under conditions of strong cultural codification of the act of economic exchange. The cases analysed support the hypothesis of a strong dependence of the pace and depth of implementations on the availability of external support, on the demographic structure of the community, and on the axiological preferences of the management. From a managerial point of view, the segmentation of contribution purposes and transparent financial reporting are elements that potentially increase the effectiveness of fundraising and strengthen the legitimacy of the organisation in Hansmann's (1980) sense.

B. Limitations of the study

The analysis carried out is subject to limitations. First, owing to the lack of public access to the financial data of individual parishes, it was not possible to quantify the economic effects of the implementations - in particular the impact of e-taca on the aggregate value of donations, their generational structure, and the costs of handling cash transactions. Second, the selection of four cases, although carefully justified by criteria of maximum variation, does not aspire to statistical representativeness; it allows hypotheses to be formulated but not strictly tested.

C. Directions for further research

The analysis conducted gives rise to clear research postulates. First, it is necessary to design quantitative parish-level studies that would allow the impact of e-taca implementations on the aggregate value of donations and on their demographic and channel structure to be quantified. The ideal approach would be a difference-in-differences quasi-experiment comparing the trajectories of revenues of parishes that have implemented and parishes that have not implemented such solutions over analogous periods. Second, it would be valuable to conduct in-depth interviews with clergy, members of parish economic councils and technology providers, in order to gain a fuller understanding of the decision-making process, barriers and success factors. Third, the further development of the substitutive model is cognitively interesting - whether the Parish of the Holy Name of Jesus in Poznań will remain an exception or will prove to be a precursor of a broader trend. Fourth, a comparison with other areas of the non-profit sector (foundations, charitable organisations, cultural institutions) which are also adopting cashless infrastructure within the Polska Bezgotówkowa programme would be desirable, in order to answer the question of whether the specificity of religious institutions significantly differentiates the dynamics and effects of implementations.

In a broader perspective, the study of the digitalisation of cash transactions in non-profit institutions fits into a fundamental question of contemporary economics: to what extent technological solutions originally designed for commercial transactions are capable of transforming areas traditionally situated outside the logic of the market - and what consequences this has for the relationship between an institution and its stakeholders. The Polish parish sector, on account of its scale and social significance, constitutes in this context an exceptionally convenient field of observation.

VII. References

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