

Increasing Church Revenue and Worship Attendance: An empirical study of Canadian Baptists¹

Alan Chan
Crandall University,
Moncton, New Brunswick, Canada
Email: alan.chan@crandallu.ca

Bruce Fawcett
Acadia Divinity College of Acadia University,
Wolfville, Nova Scotia, Canada
Email: bruce.fawcett@acadiau.ca

Shu-Kam Lee
Shue Yan University,
Hong Kong
Email: sklee@hksyu.edu

Abstract:

Church giving and attendance are two important indicators of church health and performance. In the literature, they are usually understood to be simultaneously determined. Using the data collected from among Canadian Baptist churches in Eastern Canada, this study investigates the factors affecting the level of the two indicators by the panel two-stage least square estimation method. Applying Wintrobe's (1998) political economy model on dictatorship, the equilibrium level of worship attendance and giving is predicted. Through various simulation exercises, the paper concludes with insights on effective ways church leaders can allocate scarce resources to promote growth within churches.

Keywords: Church attendance, Church revenue, Panel Two-stage Least Square Estimation, Baptist, Canada

¹ We want to thank Sam Reimer, Robert MacDonald, and Andrew Yuengert for their insightful comments and help.

Increasing Church Revenue and Worship Attendance: An empirical study of Canadian Baptists

Abstract:

Church giving and attendance are two important indicators of church health and performance. In the literature, they are usually understood to be simultaneously determined. Using the data collected from among Canadian Baptist churches in Eastern Canada, this study investigates the factors affecting the level of the two indicators by the panel two-stage least square estimation method. Applying Wintrobe's (1998) political economy model on dictatorship, the equilibrium level of worship attendance and giving is predicted. Through various simulation exercises, the paper concludes with insights on effective ways church leaders can allocate scarce resources to promote growth within churches.

Keywords: Church attendance, Church revenue, Panel Two-stage Least Square Estimation, Baptist, Canada

1.0 INTRODUCTION

Voluntary donations and worship attendance² are two important indicators of the health of a Christian church. Donations are essential to churches because without adequate revenue, it is difficult for ministries to grow or even survive. Declining financial support may be one of the early signals that a church is in decline. Likewise, attendance at weekly worship services may be another important measure of a church's health and viability since it is normally the key indicator of the number of people who identify with a particular congregation. While some local churches continue to flourish, many North American churches face struggles in either attendance or revenue, and sometimes both. To secure a bright future, it is critically important for struggling churches to find ways to increase both donation revenue and worship attendance. This study aims to explore the relationship between worship attendance and revenue so that churches can allocate resources more efficiently in order to increase both.

Chaves (1999) argues that changes in financial giving by parishioners reflect involvement changes. In his study, Chaves demonstrates that lower than expected religious giving is correlated with declining religious involvement. Essentially, what Chaves argues is that religious involvement is one important influence on the level of giving within local churches. If there are more people attending weekly worship services, the church will receive more revenue in aggregate amount. In his research, attendance is exogenously determined. Even though free riding³ may exist in larger churches, generally total revenue increases with attendance. The rate of increase, however, is decreasing.

Wilhelm, Rooney, and Tempel (2007), on the other hand, examine the opposite side of the relationship of these two variables and conclude that changes in religious giving changes the degree of religious involvement. Attendance is endogenous; but giving is exogenous. As one increases amounts of giving to a local congregation, the more open one is to being more involved in the life of that local congregation. Iannaccone, Olson, and Stark (1995) include resource allocation in their analysis. They demonstrate that the allocation of time and money has significant impact on congregational size. For instance, if a church has greater financial resources, it can employ more staff who build relationships with more people and as a consequence, more people will attend their worship services.

Ehrenberg (1977) argues that religious contributions and religious attendance are presumably simultaneously determined. However, no structural relationships were discussed or calibrated in that paper. Sullivan (1985) is the first researcher to empirically determine the relationship between church contributions and church attendance. He used data from a 1963 survey of 3,000 church members in Northern California. He discovered that both attendance and contributions rose with income. In this current study, however, the researchers attempt to employ Wintrobe's (1998) theoretical model to study this

² In this paper, it is argued that worship service attendance is one of the best measurements of religious involvement at the aggregate level.

³ Free-riding refers to the phenomena whereby the per capita amount of revenue decreases with congregation size.

simultaneous relationship between church contributions and church attendance and later test it with a more recent dataset that is collected among Baptists in Eastern Canada.

Many other studies have also indicated that religious giving and involvement change together across time including Clain and Zech (1999), Forbes and Zampelli (1997), Iannaccone (1997), and Olsen and Caddell (1994). Gruber (2004), however, suggests that giving and involvement are substitutes. Gruber demonstrates that a tax cut will increase church attendance, but will result in less giving to local churches.

Thus far, all major studies exploring the relationship between local church donation revenue and worship attendance have based their conclusions on data collected within the United States of America. In this study, however, data collected from Canadian Baptist churches in Eastern Canada are utilized to explore the relationship between donations and worship attendance in a Canadian context.

This study does not limit research on church attendance to an examination of Sunday worship attendance. It also examines the impact of the attendance of different age groups at church programs on financial giving. This study estimates the “financial returns to different ministries” and suggests a way for church leaders to balance their use of resources among different age groups. When a church devotes resources to attracting working age individuals, the decision can be viewed as a financial investment of short-term benefit. Should these adults choose to join a local congregation, they can immediately contribute financially. Conversely, when a church devotes resources to promote programs for teenagers or young adults, the decision can be viewed as a financial investment likely to yield longer-term results.

The rest of this article is organized as follows: Section 2 provides a theoretical model to explore how donations and religious involvement interact with each other, Section 3 discusses the data, Section 4 reveals the empirical analysis, Section 5 states the empirical findings, Section 6 discusses the calibrated model, and Section 7 concludes the paper and suggests possible implications for local churches.

2.0 THEORETICAL MODEL

In Ronald Wintrobe’s book *The Political Economy of Dictatorship* published by Cambridge University Press in 1998, he argues money and power are two important objectives of dictatorial economies. On one hand, the more power a dictator has, the more likely the dictator can squeeze increasing amounts of money by increasing the oppression of citizens. On the other hand, the more money a dictator has, the more he or she can invest in policing and military equipment thus reinforcing the his or her power. In other words, these two variables (money and power) are simultaneously determined. Wintrobe then proposes a theoretical model, using these two simultaneously determined dimensions, to analyze different dictatorships and classifies them into four different types: Tyrant, Totalitarian, Tinpot, and Timocrat.

In the literature of church giving and church attendance, researchers⁴ have argued that a similar relationship is found. In other words, church giving and church attendance are also simultaneously determined. Furthermore, few ministers would disagree that these two variables (giving and attendance) are among the most important indicators to determine the health of a church. While congregations with inadequate attendance or giving may need to consider closure, churches with higher levels of attendance are likely to receive higher levels of giving, and any churches with higher levels of giving are likely to have higher level of attendance.

Therefore, the researchers would like to apply the model Wintrobe (1998) uses to study the simultaneous relationship between money and power for dictators, to study the simultaneous relationship between attendance and giving in churches. Later, the researchers will use a dataset collected by the Convention of Atlantic Baptist Churches to study this extended model. These are the major contributions of this current paper. It is noted that even though the researchers employ a dataset from Christian congregations, this analysis may be applied to local congregations affiliated with other faiths.

In this simple extended theoretical model, there are two dimensions: attendance (WA) and donations (TR). There are two functions acting simultaneously and the equilibrium level of WA and TR is found at the intersection of these two functions.

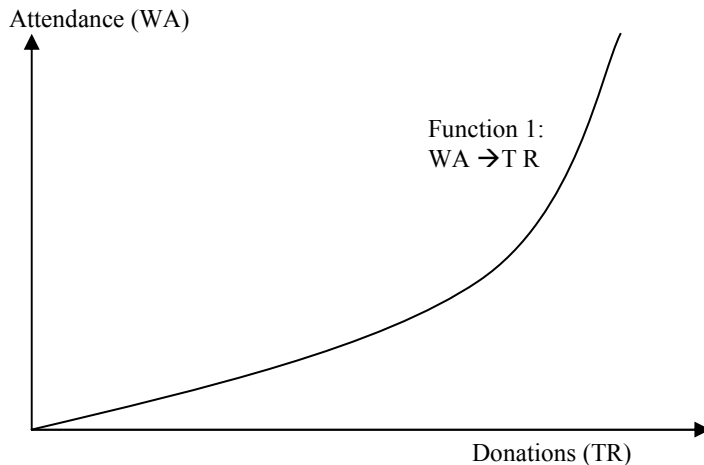
Function 1 is a transformation function that changes attendance to donations. The level of donations is determined by worship attendance. It is assumed that this function is increasing with decreasing rates.

This causation relationship is positive, meaning the more churchgoers, the larger the total sum of donations will be received. It is worth noting that the researchers are not comparing different churches with different congregation sizes. The researchers are arguing that for any church, every additional churchgoer will be contributing a non-negative amount of giving and therefore, the sum of donation will be higher than without this additional churchgoer. In other words, church attendance can generate church donations, *ceterius paribus*.

However, this positive relationship is a decreasing one. One possible explanation of the decreasing rate is that when there are more and more people attending Sunday worship services, free riding occurs. In other words, the average donation per person decreases. The problem of free riding is well-discussed in the literature. An excellent review can be found in Lipford (1995). This function can be illustrated graphically in Figure 1:

Figure 1

⁴ See Ehrenberg(1977), Sullivan (1985) and Lunn, Klay and Douglass (2001).



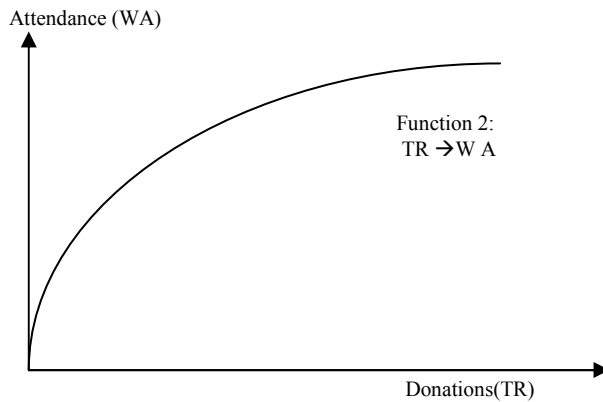
Function 2 is a transformation function that works in the opposite direction. It demonstrates that donations affect Sunday worship attendance. This function is also increasing at a decreasing rate.

This positive causation relationship, the assertion that the more donations a church receives, the more worship attendees it can attract, can be difficult to support. The researchers believe, however, that this causation relationship has grounds for support. First, if a church receives increased monetary resources, it may be able to improve both the quantity and the quality of religious goods that they offer. Quantity means they can start new programs that can attract those who currently do not come to their church. For example, a church may organize a children’s program that accompanies the Sunday morning worship experience which may result in more children and their parents attending worship services. Similarly, churches offering English as an Additional Language programs are more likely to draw the attention of recent immigrants. It is very possible that these immigrants may begin to attend worship services in the church that offered them assistance. Therefore, worship attendance may increase when new programs offered as a result increased donation revenue. Similarly, when a church receives more donations, it can also improve the quality of religious goods it provides. For instance, a newly renovated church can provide more comfortable nursery or a higher quality music program both of which may encourage visitors to return, thus boosting worship attendance. Having more resources can also allow churches to organize more conferences or special events that may enhance the religious capital of existing church goers. Those who attend these events may, in turn, invite their neighbors and friends to join them in participating in the life of the church, including worship services.

Second, in the literature mentioned above, there is research to support the simultaneous relationship between church attendance and church giving. This literature implies that these two variables are endogenous and later in the empirical analysis the researchers will show that this co-relationship is also significant in this study. Something ought to determine the level of church attendance and this correlation is necessary to argue if there is a causal relationship either way.

Third, according to the scriptures⁵, when the Lord provides more it usually results in greater responsibility⁶. It can be argued theologically that if a church receives more donations, it has added responsibility within the Kingdom of God. It is biblical to believe that a church with more God-provided giving is capable of doing more things for the Kingdom compared with another church to which God has not provide the same level of resources. One of the major responsibilities for churches⁷ is to reach out to those who do not have a relationship with God. When God provides more resources to that church, the church should react by planning programs and initiatives that will allow it to serve members of its community. For these three reasons the researches assert their belief that donations can increase worship attendance.

Figure 2



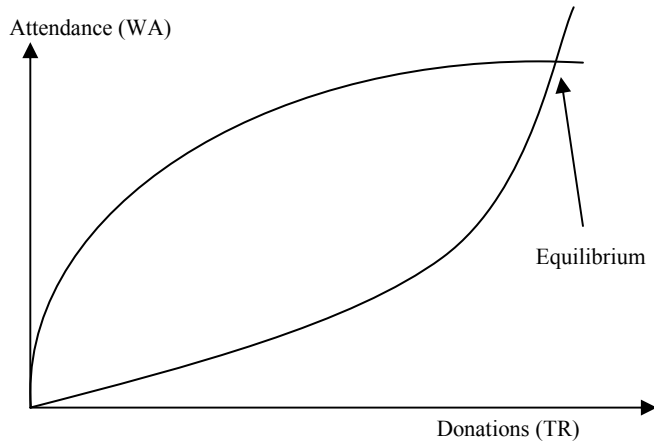
These two functions interact and the equilibrium occurs at the intersection as illustrated in Figure 3:

Figure 3

⁵ See Mark 4:25, 25:29; Matthew 13:12; and Luke 8:18, 19:26.

⁶ The authors want to thank Barry Smith for making this point.

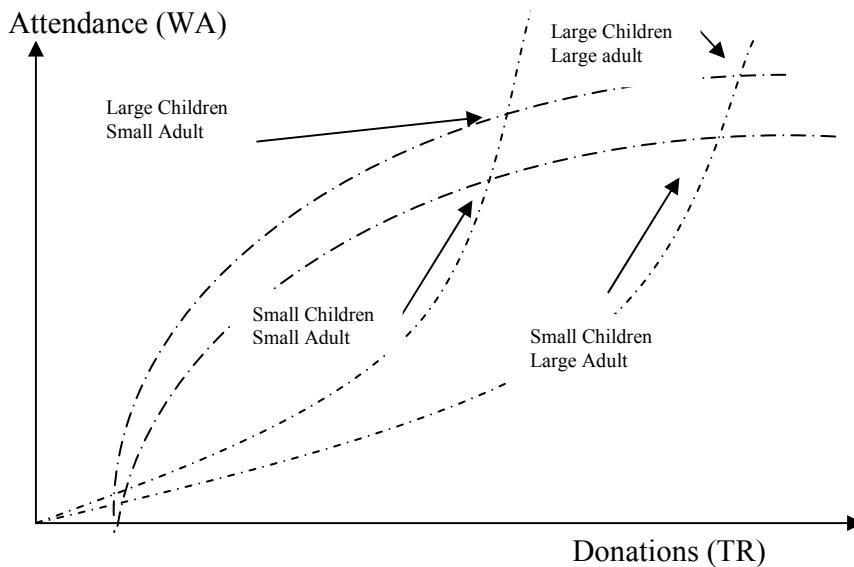
⁷ See Matthew 28:19-20 “Go ye therefore, and teach all nations, baptizing them in the name of the Father, and of the Son, and of the Holy Ghost: Teaching them to observe all things whatsoever I have commanded you: and, lo, I am with you always, even unto the end of the world. Amen.”



The equilibrium occurs at the intersection of the two curves. It should be noted that this equilibrium is stable because any deviations of donations and attendance will be self-adjusting over time.

The location of the transformation functions may have important implications on the current situation of the church. For example, if a church has been focusing on children’s ministries there may be a more effective Function 2 (TR → WA). In other words, given the same level of aggregate donations, the church can attract more attendees. On the other hand, if a church has been focusing on adult ministries, it may have a more effective Function 1. This means that the same level of attendance will generate a larger aggregate donation amount. A summary of analysis is illustrated in Figure 4:

Figure 4



This theoretical model predicts that churches with comparatively large adult ministries but small children’s ministries will have a higher level of revenue, but a lower level of

attendance. Churches with a large children's ministry will have a higher level of attendance, but less revenue.

3.0. DATA AND DATA ANALYSIS

Data used in this study were collected from member churches of The Convention of Atlantic Baptist Churches. The Convention is ministry partnership of 502 Canadian Baptist churches located in Canada's four eastern-most provinces: Newfoundland, Prince Edward Island, Nova Scotia, and New Brunswick. Through the Convention, these churches operate a variety of ministries including a university, a seminary, a network of residences for senior citizens, and a Foundation that functions like a credit union. They also support each other through sharing staff in areas such as ministry to youth, leadership training, and mission activity.

Each January the Convention office, located in Saint John, New Brunswick, circulates an Annual Report form by post (see Appendix) to all member churches, asking them to report on issues such as finances, membership, and attendance at various local church programs for children, youth, and young adults. The Convention leadership uses these data to help them decide what programs and initiatives should be offered to best support member churches. Attendance averages are requested for the following: average Sunday morning worship attendance, average youth group attendance (Grades 6-12), number of youth and leaders involved in short-term mission trips, average Sunday School attendance, number of Grade 6-12 youth in weekly Bible study programs, total participating in Vacation Bible School-type events, and total participating in young adult groups. In addition, members churches are also asked to report their membership according to the following categories: received by baptism, received by letter, received otherwise, removed by death, removed by letter of transfer, removed otherwise, total membership, and resident membership (active and inactive).

Typically, approximately 70% to 80% of member churches return a completed report to the Convention office. Once a form is received, a Convention staff person enters the data from each church into an Excel spreadsheet. The data are presented by church, with summaries by geographic region, in two broad categories: revenue and attendance. The data are circulated throughout the constituency early each summer in an appendix to the annual Yearbook which contains the financial and ministry reports submitted to the member churches in advance on the annual general meeting held in late August. The collected data are deemed reliable given that they are submitted by member churches and recorded as received without interpretation or modification.

What follows is a presentation and brief discussion of the data relating to church revenue and attendance at programs sponsored by the churches of the Convention of Atlantic Baptist Churches in the years 2001 to 2006.

Table 1: 2001-2006 Mean Membership, Donation, and Program Attendance for Member Churches of the Convention of Atlantic Baptist Churches

	2001	2002	2003	2004	2005	2006
Total Membership	121.73	121.60	121.64	123.01	122.76	120.52
Youth Bible Study Attendance	14.53	15.55	15.52	15.05	15.61	16.59
Sunday School Attendance	83.66	82.73	83.14	80.04	82.06	79.98
Average Worship Attendance	72.10	74.53	73.53	82.25	76.33	75.40
Total Giving (000's)	83.09	87.41	88.56	92.51	101.09	110.06
Weekly Youth Group Attendance	18.05	18.66	18.33	18.71	19.75	16.76
Participants in Short-term Mission Trips	12.73	15.44	13.61	13.20	13.78	11.56

Table 1 reports that the total membership of churches that are a part of the Convention has remained relatively stable in the years 2001 to 2006. In 2001 churches reported a mean membership of 121.73 whereas in 2006 churches reported a mean membership of 120.52.

The data in Table 1 demonstrate that mean Sunday School attendance in Convention churches has been in steady decline from 2001 to 2006. The 2001 mean attendance was 83.66, whereas the 2006 mean attendance was to 79.98. This drop may reflect the lower level of attention and support given to Sunday Schools from the Convention office. In a restructuring of Convention ministries in 2001 the Christian Training department, which primarily provided support to the Sunday Schools ministries of member churches, was closed.

Table 1 reports that mean worship attendance has increased between 2001 and 2006. In 2001 Sunday worship services were attended by 72.10 people, whereas in 2006 Sunday worship services were attended by 75.40. This increase in worship attendance among member churches stands in contrast to trends in the broader Canadian environment in which weekly worship attendance is in decline (Ray, 2003). The increase in worship attendance stands in sharp contrast to the decrease in total membership reported above. This may suggest that the increase in worship attendance is due to an influx of children and youth or that while some are willing to attend worship services, they are less inclined to officially join a church. The reason for the spike in worship attendance in the year 2004 to 82.25 is unclear.

Data reported in Table 1 demonstrate that weekly youth Bible Study programs for teenagers have grown slightly in the period 2001 to 2006. In 2001 the mean attendance was 14.53 while in 2006 the mean attendance was 16.59. This increase in attendance at youth Bible study programs reflects the growing emphasis on the importance of youth ministry within the Convention and mirrors the growth seen in Convention-wide youth events and the number of youth pastors serving in Convention churches (Fawcett, McDonald and Nylen, 2005).

The data in Table 1 indicate that local church revenue has increased steadily in the period 2001 to 2006. In 2001 mean total church revenue was \$83,090 whereas in 2006 mean total church revenue was \$110,060. This represents an average annual increase in giving of 5.78%. This rate of increase is higher than the average annual inflation rate in Canada

of 2.16%⁸. The fact that giving has increased sharply during a period when total church membership has declined may suggest that the remaining members are either more affluent or more devoted, or perhaps both.

Table 1 reports the mean attendance at weekly youth group meetings in Convention churches. These programs for Middle School and High School students are different from the youth Bible study programs discussed above. Whereas the Bible Study programs focus on learning and spiritual growth for the participants, youth group meetings generally include sports and games that focus on fun and developing positive relationships. Nearly twice as many churches report having weekly youth group meetings as compared to youth Bible study programs. The data demonstrate that the number of youth attending youth groups increased from 18.05 in 2001 to 19.75 in 2005. However for some unexplained reason, youth group attendance declined in 2006 to 16.76.

Table 1 reports data on the mean number of youth and leaders involved in short-term mission trips. For many years the Convention has been encouraging member churches to sponsor one-week mission and service experiences for teenagers where they can grow in their faith by serving others. Typically these “mission tours” take place within Eastern Canada, although some churches send youth teams further away. In alternating years the Convention sponsors Tidal Impact, a popular summer youth mission and service program. This program has grown to include more than 1,200 youth and leaders, making it the largest youth mission program in Canada (Fawcett, McDonald and Nysten, 2005). Tidal Impact was held in 2000, 2002, 2004, and 2006 causing wide fluctuations in the number of churches sending out short-term mission teams from year to year. The significant differences in the number of churches sending out short-term mission teams make comments on year over year trends meaningless.

Figure 5 Demographics within the Convention of Atlantic Baptist Churches (2001 – 2006).

⁸ Number calculated using Statistics Canada data on core-CPI.

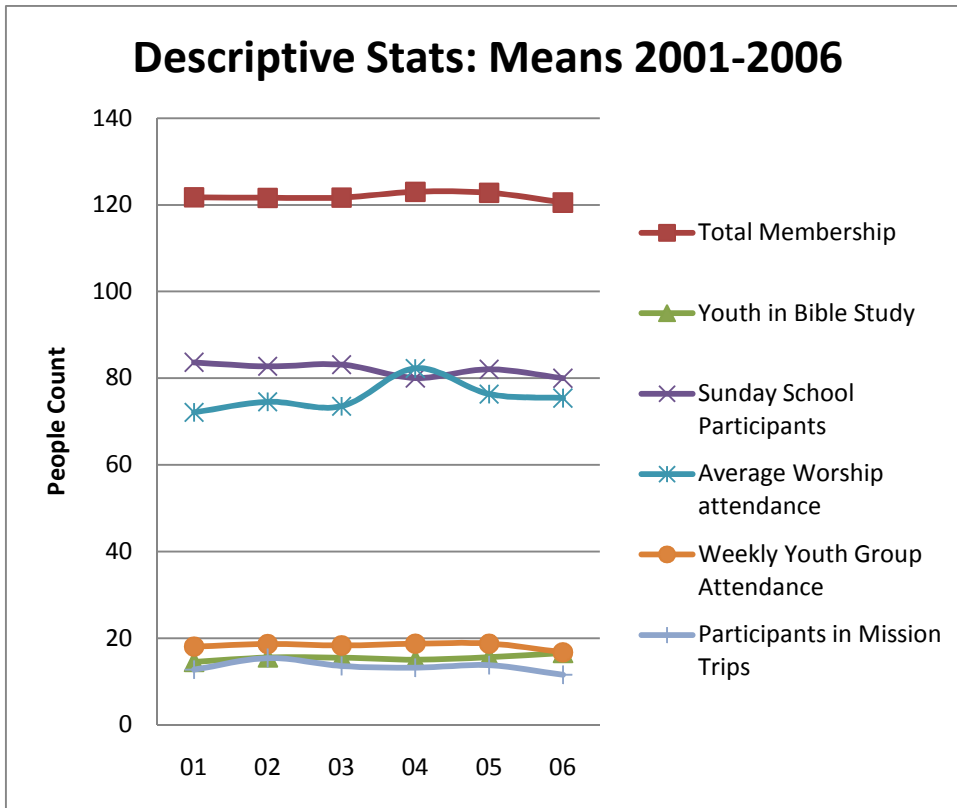
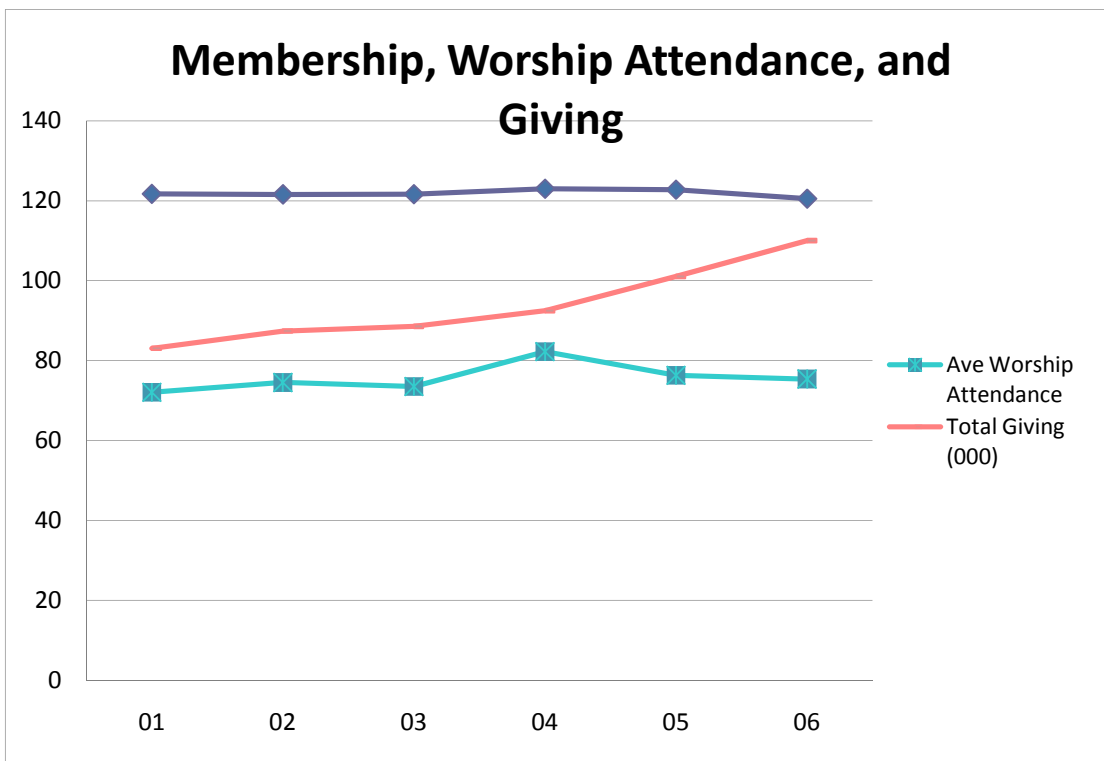


Figure 6 Membership, Worship, and Giving



4.0 ESTIMATION

This paper aims to examine the relationship between worship attendance (WA) and total giving (TR). As mentioned in section 1, these two variables interact with each other and the structural equations of the two variables are formulated as follows:

$$WA = \alpha_0 + \alpha_1 TR + \alpha_2 RCL + \alpha_3 AA + \alpha_4 AM + \alpha_5 RCB + \alpha_6 YG + \alpha_7 YL + \alpha_8 BS + U \quad (1)$$

$$TR = \beta_0 + \beta_1 WA + \beta_2 RCL + \beta_3 AA + \beta_4 AM + \beta_5 RCB + \beta_6 YG + \beta_7 YL + \beta_8 BS + V \quad (2)$$

U and V are denoted as stochastic disturbance terms for WA and TR respectively. Other variables employed in this model are defined in Table 2.

Table 2: Other Variables Used in the General Model

<i>Variables</i>	<i>Definition</i>
RCL	New members received by letter. It is expected that both TR and WA are positively affected by RCL.
AA	Average Sunday School attendance. It is expected that both TR and WA are positively affected by AA.
RCB	New members received by baptism. It is expected that both TR and WA are positively affected by RCB.
YG	Average Youth Group attendance. It is expected that both TR and WA are positively caused by YG.
YL	Number of youth and leaders engaged in short-term mission. The relationships between YL and TR, WA are expected to be ambiguous. On one hand, the more youth and leaders involved in short-term mission experiences, the fewer who remain in local church to attend worship and give, on the other hand, more youth and leaders involved in short-term mission can promote a higher level of religiosity in a local congregation.
BS	Youth in Bible Study. It is expected that both TR and WA are positively affected by BS.

Since WA and TR endogenously (or simultaneously) determine each other, the disturbance term of WA and TR, U and V, are correlated with their explanatory variables. As a result, (i) the conventional ordinary least squares (OLS) estimators are biased and inconsistent and (ii) the variances and standard errors of these estimators are incorrectly estimated and hence vitiating the usual hypothesis testing procedures. To alleviate these problems, we employ two-stage least squares regression (2SLS) method by creating an instrument variable to replace the problematic (endogenous) variable. In equation 1, WA

is firstly regressed on the instruments⁹. Its estimated values (the instrumental variable) are used to substitute for actual values of WA, lest violate the OLS regression's assumption that the explanatory variables are uncorrelated with the disturbance terms. Equation 1 is then computed in OLS fashion to obtain 2SLS estimates. Similar estimation procedure is employed for TR in equation 2.

TWO-STAGE LEAST SQUARES FOR PANEL DATA

The data set in this study contains the pooling of observations on cross-section (various churches) and time series data. To estimate such a pooled data model, one may have to use the panel data method. Panel data have several advantages over cross-section of time series data such a larger sample size and more efficiency. This method is also better suited to study the dynamics of adjustment by studying repeated cross-section observations, thus being better able to identify and measure effects that are simply not detectable in pure cross-sections or pure time series data, and thus enabling researchers to study more complicated behavioural models.¹⁰

5.0. EMPIRICAL FINDINGS

REGRESSION RESULTS:

A systematic and sequential testing down procedure is employed which proceeds step by step from the general model to a simpler specific model¹¹. After the testing down procedure, the final preferred models become:

$$\begin{aligned} \text{WA} = & -2.723 + 0.516 \text{ TR} + 0.244 \text{ AA} + 0.168 \text{ BS} \\ & (-1.59) \quad (6.408)** \quad (3.29)* \quad (2.27)** \quad \text{Adjusted } R^2 = 0.73 \quad (3) \end{aligned}$$

$$\begin{aligned} \text{TR} = & 8.115 + 0.838 \text{ WA} \\ & (12.27)** \quad (0.674)** \quad \text{Adjusted } R^2 = 0.74 \quad (4) \end{aligned}$$

Note:

1. All variables are in natural logarithms.
2. Standard errors are in parentheses.
3. **, * indicate significance at the 5% and 1% level.
4. Instrument list: lags of RCL, AA, AM, RCB, YG, BS, YL

⁹ The lagged variables are used as instruments. For details, see Siebert (2010).

¹⁰ For details, see Baltagi (2008).

¹¹ For details on the testing down procedure, please see Chan and Lee (1997)

FINDINGS:

Specific model for average Sunday worship attendance. An analysis of the data reveals that only three of the variables studied directly affect Sunday worship attendance. There is a positive significant relationship between total church revenue, average Sunday School attendance, the number of youth in Bible study and Sunday worship attendance. This means that as the total church revenue increases or as the number of people attending Sunday School or youth Bible study programs increases, the number of people attending Sunday worship services also increases. The coefficient of Average Sunday School Attendance (AA) is 0.244. This means that a 1% increase in Average Sunday School Attendance appears to have resulted in a 0.244% increase in average Sunday worship attendance. The coefficient of Youth Bible study (BS) is 0.168: indicating that a 1% increase in youth number may have induced a 0.168% increase in Sunday worship attendance.

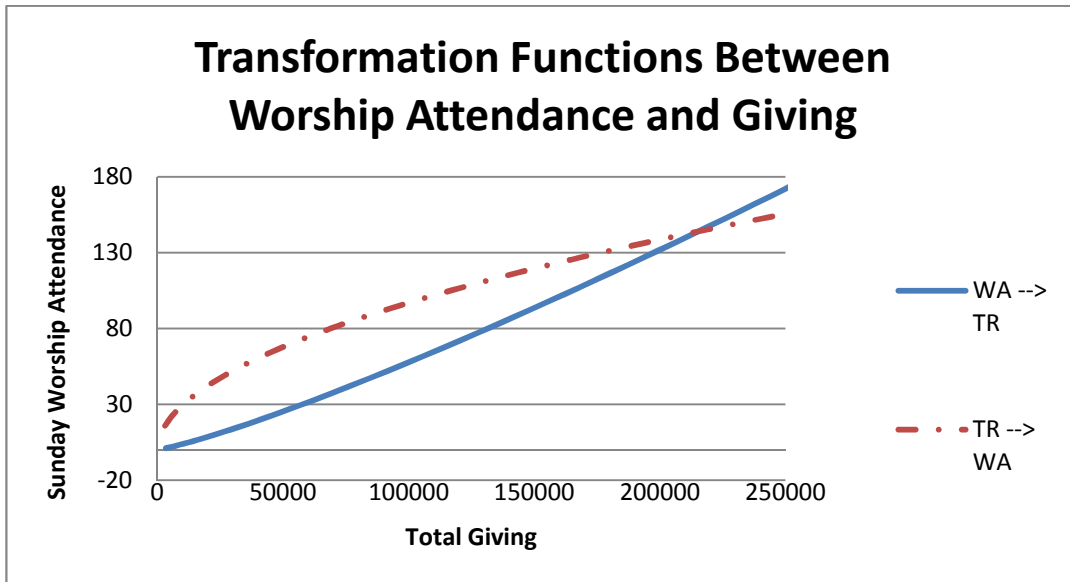
Specific model for church revenue. An analysis of the data reveals that only one variable studied directly affects church revenue. There is a positive significant relationship between average Sunday worship attendance and total church revenue. This means that as attendance at Sunday worship services increased, total church revenue appears to have increased as well. The coefficient of Average Worship Attendance: (A) is 0.838. This means for every 1% increase in Sunday worship attendance, Canadian Baptist churches in Eastern Canada appear to have experienced a 0.838% increase in revenue.

Since, as noted above, there appears to be a positively significant relationship between Sunday worship attendance and average Sunday School attendance and the number of youth attending Bible study programs, it can be said that local church revenue appears to be indirectly influenced by the exogenous variables of average Sunday School attendance and the number of youth involved in Bible study.

6. CALIBRATED MODEL

The pooled average of AA and BS are 40 and 15 respectively. Taking these two average values into equation 1 and 2, the transformation curves are plotted in the next diagram. It is noted that WA denotes Attendance, whereas, TR denotes Donation.

Figure 7 Transformation Functions Between Worship Attendance and Giving

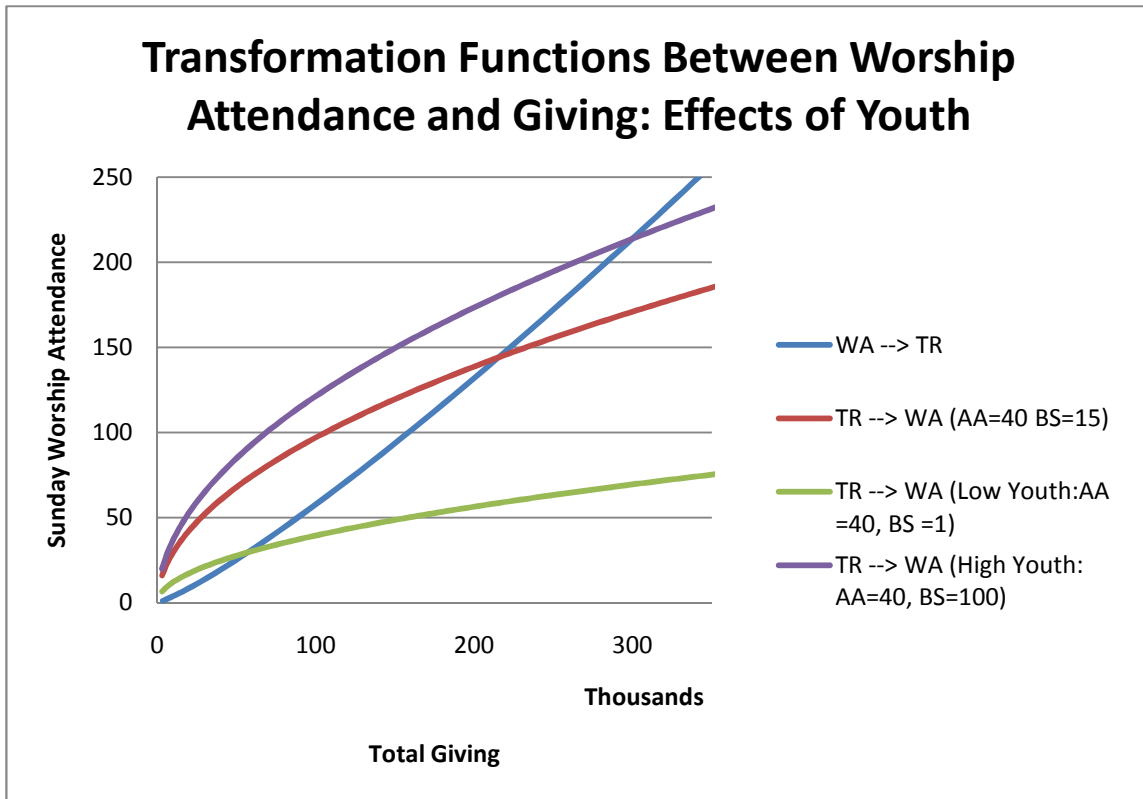


This model predicts the equilibrium of the “average” Canadian Baptist church in Eastern Canada should have about 145 people attending Sunday worship and approximately \$220,000 in annual donation revenue. In the churches studied, however,, the mean worship attendance is in the low 120s and mean annual donation revenue is below \$100,000. This implies these churches either (1) have not yet arrived at the steady state, or (2) have something that prevents them from getting there.

EFFECTS OF YOUTH

Figure 8 contrasts a church with low (BS=1), medium (BS=15) and high (BS=100) number of youth in weekly Bible study. These values are based on the minimum, mean, and the maximum number of BS in the data set.

Figure 8 Transformation Function Between Worship Attendance and Giving: Effects of Youth

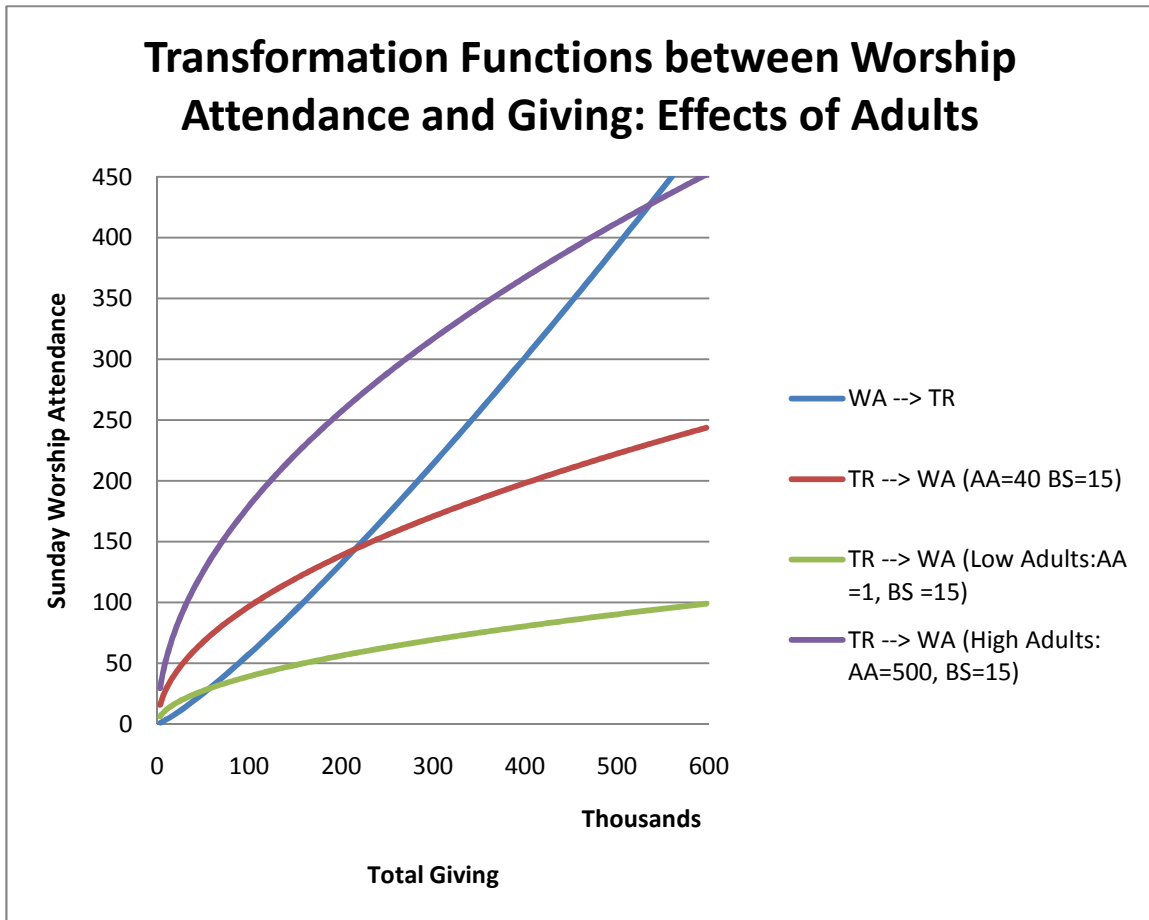


It appears that as a youth weekly Bible study program grows in size, both giving and Sunday worship attendance also increases. If the number of youth increases from 15 to 100, worship attendance may be expected to rise from about 140 to about 215 people, and total giving may be expected to rise from about \$240,000 to more than \$300,000.

EFFECTS OF ADULTS

Figure 9 contrasts a church with low (AA=1), medium (AA=40), and high (AA=400) Average Sunday School attendance. These values are based on the minimum, mean, and the maximum number of AA in the data set.

Figure 9 Transformation Function Between Worship Attendance and Giving: Effects of Adults



It appears that investing in adult ministry may increase both giving and Sunday worship attendance. For example, if the number of adults increases from 40 to 500, worship attendance may rise from about 140 to about 425 people, and total giving may rise from about \$240,000 to more than \$550,000.

The calibrated model predicts that the average Canadian Baptist church in Eastern Canada should have a giving norm of just over \$200,000 and an average worship service attendance of about 140 people. However, in the data set, the global averages for these two variables are \$90,000 and 75 people. Both these numbers are approximately 50% of what the model predicted at the steady state.

	Predicted Steady-State value	Actual data	Differences	Percent Difference
Giving	\$200,000	\$90,000	-\$110,000	45.00%
Attendance	140	75	-65	53.57%

The following implications or observations can be made:

1. The churches studied are not operating at their full potential. Resources are either being wasted or not employed the most efficient manner.
2. Both numbers are approximately 50% less than the predicted steady state values and thus the churches that were examined are not yet at equilibrium. Church leaders have reason to be optimistic since with proper leadership and carefully considered financial investments, the future for these churches could be brighter.
3. There is possible leakage of both giving and attendance. This means that resources that are spent in some other ministries may need to be reinvested in ministries that have a greater impact upon total revenue and Sunday worship attendance according to our data.

7.0 CONCLUSIONS

This study employs annual data from member churches of The Convention of Atlantic Baptist Churches to explore the question of how churches can grow their donation revenue and worship attendance. The calibrated model suggests that of the variables examined, the only variable that impacts a church's level of donations is Sunday worship attendance. At the same time, this study has also concluded that worship attendance is affected only by Sunday School attendance and youth Bible study attendance. This means that churches of the Convention of Atlantic Baptist Churches that wish to increase their donations should consider focusing their efforts on increasing their Sunday morning worship attendance. At the same time, churches that wish to increase their Sunday morning attendance would be advised to consider investing financial and leadership resources in the areas of Sunday School and youth Bible study programs. Since this study has also concluded that member churches of the Convention of Atlantic Baptist Churches are not operating at their full potential because the actual level of giving and attendance are both lower than what the proposed model predicts, there is reason to believe that investments of financial and leadership resources in the identified areas could result in growth in worship attendance and donation revenue.

While the results of this study were instructive, to build upon this research future studies should explore the effects of the variables studied among churches affiliated with other denominations and churches located in other geographic areas. In addition, future studies could contribute to an understanding of how churches increase donation revenue and worship attendance by studying the role of variables not examined in this study including music programs, small group programs, and benevolent ministries such as soup kitchens and food banks. There may also be value in studying demographic variables such as educational level and income level, information which for this study was unavailable. Such variables may have serious predictive and explanatory implications for giving and worship attendance.

8.0 REFERENCES

Baltagi, Badi. 2008. *Econometric Analysis of Panel Data*, 4th Edition, New York: John Wiley & Sons.

Chaves, Mark. 1999. "Congregations and Welfare Reform: Who Will Take Advantage of 'Charitable Choice'?" *American Sociological Review* 64(6): 836-846.

Chan, H. L., and S. K. Lee. 1997. "Modeling and Forecasting the Demand for China", *Energy Economics* 19: 271-287.

Clain, S. H., and C. E. Zech. 1999. "A Household Production Analysis of Religious and Charitable Activity." *American Journal of Economics and Sociology* 58(4): 923-946.

Ehrenberg, R. 1977, "Household Allocation of time and religiosity: Replication and Extension." *Journal of Political Economy* 85: 415-423.

Fawcett, Bruce, Mike McDonald, and Rob Nysten. 2005. *Mission Tour: successfully leading youth on a short-term mission experience*, Saint John, New Brunswick, Convention of Atlantic Baptist Churches.

Forbes K.F. and E. M. Zampelli. 1997. "Religious giving by individuals: A cross denominational study". *American Journal of Economics and Sociology* 56(1): 17-30.

Gruber J. 2004. "Pay or pray? The impact of charitable subsidies on religious attendance", *Journal of Public Economics*, 88(12): 2635-55.

Hausman, J.A. and W. E. Taylor. 1981. "Panel data and unobservable individual effects", *Econometrica* 49: 1377-1398

Iannaccone, Laurence. 1997. "Introduction to the Economics of Religion." *Journal of Economics Literature*, Vol. XXXVI: 1465-1496.

Iannaccone, Laurence, Daniel V. A. Olson, and Rodney Stark. 1995. "Religious Resources and Church Growth." *Social Forces* 74(2): 705-731.

Johnston, J. and John Dinardo. 1997. *Econometric Methods*, 4th ed. New York: McGraw-Hill.

Lipford, J. 1995. "Group size and the free-rider hypothesis: An examination of new evidence from churches" *Public Choice* 83(3-4): 291-303.

Lunn, J, Robin Klay and Andrea Douglass. 2001 " Relationships among giving, church attendance, and religious belief: The case of the Presbyterian Church (USA)." *Journal for the Scientific Study of Religion* 40(4): 65-775.

Olson, D.V.A. and D. Caddell. 1994. "Generous Congregations, Generous Givers: Congregational Contexts that Stimulate Individual Giving." *Review of Religious Research* 36: 168.

Ray, Julie. 2003. *WORLDS APART: RELIGION IN CANADA, BRITAIN, U.S.*
<http://www.gallup.com/poll/9016/Worlds-Apart-Religion-Canada-Britain-US.aspx>

Siebert, Ralph B. (2010) "Learning-by-Doing and Cannibalization Effects at Multi-Vintage Firms: Evidence from the Semiconductor Industry," *The B.E. Journal of Economic Analysis & Policy*: Vol. 10 : Iss. 1 Article 37.)

Sullivan, D. H. 1985. "Simultaneous Determination of Church Contributions and Church Attendance." *Economic Inquiry* 23: 309-20.

Wilhelm M. O., P. M. Rooney, and E. R. Tempel. 2007. "Changes in Religious Giving Reflect Changes in Involvement: Age and Cohort Effects in Religious Giving, Secular Giving, and Attendance. " *Journal for the Scientific Study of Religion* 46: 217-32.

Wintrobe, Ronald. 1998. *The Political Economy of Dictatorship*, New York: Cambridge University Press.

APPENDIX: THE SURVEY

ANNUAL CHURCH REPORT

This is the church's record as it will appear in the next Convention Yearbook and in the on-line Directory. It is the clerk's responsibility in consultation with the treasurer and pastor to complete all the blanks accurately. **Please print.**

**Please return completed signed report by March 7, 2008 to Convention of Atlantic Baptist Churches,
1655 Manawagonish Road, Saint John, NB E2M 3Y2**

Legal Church Name: _____
Association: _____

Church Mailing Address:
City/Town _____ Province _____ Postal Code _____ Fax _____
This mailing address belongs to the: Church _____ Parsonage _____ Pastor's home _____ Other (please specify) _____

This telephone number belongs to the: Church _____ Parsonage _____ Pastor's home _____ Other (please specify) _____
Telephone _____ Church E-mail Address _____ Website _____

Church Civic Address (if different from above mailing address): _____

Officers for the Coming Year
Pastor: _____ Spouse _____ Start Date at Church _____
Address _____ City/Town _____ Province _____
Postal Code _____ Home Telephone _____ Personal e-mail address _____

Other Pastoral Staff: (If insufficient space to list additional staff please attach information on separate page)
Associate Pastor _____
Title: _____ Spouse _____ Start Date at Church _____
Address _____ City/Town _____ Province _____
Postal Code _____ Home Telephone _____ Personal e-mail address _____

Clerk: _____ Start Date in that position _____
Address _____ City/Town _____ Province _____
Postal Code _____ Home Telephone _____ Personal e-mail address _____

Treasurer: _____ Start Date in that position _____
Address _____ City/Town _____ Province _____
Postal Code _____ Home Telephone _____ Personal e-mail address _____

Head Volunteer Youth Leader for Grades 6 - 12: _____
Personal e-mail address: _____

If your church is part of a pastoral field:
Field Treasurer: _____ Start Date in that position _____
Address _____ City/Town _____ Province _____
Postal Code _____ Home Telephone _____ Personal e-mail address _____

Church Licenses to Minister
(Refer to links under "Regulations Concerning the Ministry" at www.baptist-atlantic.ca/departments/executiveminister/regulationsministry)
**Licenses to be renewed yearly by vote of the church until an Association License is granted.
Include only those issued or renewed during the past year.**

Name _____ **Date License Issued or renewed:** _____

Address _____ City/Town _____ Province _____
Postal Code _____ Home Telephone _____ Personal e-mail address _____

Other Church Licenses to Minister: (If insufficient space to list additional Church Licenses to Minister please attach information on separate page)

Preaching Stations (not organized churches): _____

Membership Report

for the year ended December 31, 2007

Received by Baptism _____
Received by Letter of Transfer _____
Received Otherwise _____
Total Receptions _____

Removed by Death _____
Removed by Letter of Transfer _____
Removed Otherwise _____
Total Removals _____

Total Membership _____
Resident Membership (active & inactive) _____

Attendance Report

Average Sunday worship attendance (Main service) _____
Average Youth Group (Grades 6-12) attendance _____
Number of Youth and Leaders involved in Mission tours _____
Average Sunday School attendance _____
No. of Grades 6-12 youth in weekly Bible Study programs _____
Total participating in V.B.S. type events _____
Total participating in Young Adult group _____

Financial Report

for the year ended December 31, 2007

See "Note to Treasurers . . ." below

1. Church revenue \$ _____
2. Raised by other church groups \$ _____
3. Mission and Benevolences \$ _____

Note to Treasurers Regarding the Financial Report

1. Church Revenue

Enter the total of the regular tithes and offerings, special offerings, investment income, and other sources of income from all church

funds, including current fund, building fund, United in Mission fund, memorial fund, benevolent fund, etc.

When determining church revenue, **do not include:**

1. the opening balance for the fiscal year;
2. monies borrowed for cash flow or capital improvements;
3. monies transferred from other accounts (unless it is interest earned on investments);
4. revenue from another church on the field (for shared field expenses), if revenue was reported by the other church.

2. Raised by Other Church Groups

Enter the total of all revenues raised by other organizations which maintain their own funds (e.g.: Women's Missionary Society, World

Wide Guild, Baby Band, Ladies Circle, Men's Group, Sunday School, Youth Groups, Children's Clubs, etc.).

Note on Mission & Benevolences

From what is reported as **church revenue** in the Financial Report, enter the amount which was designated to mission outreach activity.

Note: The amount entered here has been reported also in the above. To determine this amount, **include:**

1. revenue raised for the United in Mission Fund and supplemental giving to denominational agencies (e.g.: Acadia Divinity College, Atlantic Baptist University, Canadian Baptist Ministries, association camps, hospital chaplains, etc.);
2. revenue raised for independent missions and other organizations which carry out benevolent work (e.g.: Canadian Bible Society, local foodbanks, etc.);
3. direct mission activity of the church (e.g.: local mission conferences, evangelistic events, local outreach programs, etc.).

Official Signature:

I certify that the information contained in this report is accurate to the best of my knowledge and unless otherwise indicated the contact information will be published in both the on-line and printed version of the Convention Directory.

Official Signature (Pastor or Clerk)

Signature: _____

Title: _____

Date: _____