

# **An Analysis of the Effectiveness of Counseling via the Internet**

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## **Executive Summary**

The purpose of this project is to study the effectiveness of credit and bankruptcy counseling delivered through the Internet, relative to counseling delivered via the telephone or individual, face-to-face sessions. Of particular interest is the effectiveness of the version of Internet counseling as developed by Consumer Credit Counseling Service - Atlanta compared to telephone and in-person delivery in terms of improving consumer credit profiles in the year following counseling.

The analysis utilized data on approximately 12,000 clients who received budget counseling during a two month period (March and April) in either 2005 or 2006, and nearly 19,000 clients who received bankruptcy (pre-filing) counseling during March or April of 2006. The analysis uses credit bureau data to measure credit counseling's impact on credit usage and credit profiles. The relative effectiveness of delivery channels is determined by comparing the magnitude of changes in client credit risk scores across channels, pre and post-counseling. A delinquency risk score and a bankruptcy risk score was obtained for each client in the sample at three points in time: one pair of scores at the time of counseling, one pair approximately one year prior to counseling and one pair at a point 12 months after counseling.

Multivariate regression models were utilized in the analysis to allow for circumstances other than delivery channel to influence risk score changes. For example, in addition to delivery channel, variables were included that identify home ownership, age, marital status, reported assets holdings, reported level of unsecured debt, reported net income, the client's credit score at the time of counseling, and the counselor's assessment of the client's financial condition as evidenced by the counselor's recommended action step. After accounting for all of these factors, the statistical analysis found no significant difference between telephone, internet or face-to-face delivery channels in terms of their influence on client risk scores over the 12-month period following counseling.

For clients in the bankruptcy (pre-filing) counseling product, the analysis examined only telephone vs. Internet delivery, as the in-person delivery channel was seldom used. For this product, the multivariate analysis revealed that clients using the internet channel tend to have a larger improvement in risk scores in the 12-months following counseling, even after controlling for differences in demographic variables and initial risk scores at the time of counseling.

Overall, this study has found that budget counseling through the Internet is associated with subsequent improvement in client credit profiles that is equivalent to the positive changes in profiles found for clients in face-to-face counseling. For bankruptcy counseling clients, Internet delivery is associated with greater improvement than is the case for clients counseled via the telephone.

# **An Analysis of the Effectiveness of Counseling via the Internet**

## **Overview**

The purpose of this project is to study the effectiveness of budget and financial counseling delivered through the Internet, relative to counseling delivered via the telephone or individual, in-person sessions. The objective is to determine whether the version of Internet counseling as developed by Consumer Credit Counseling Service - Atlanta (hereafter, CCCS) is as effective as (or perhaps even more effective than) telephone and in-person delivery in terms of improving consumer credit profiles over the year following counseling. The analysis uses credit bureau data to measure credit counseling's impact on consumer credit usage and credit profiles. The effectiveness of each delivery channel is determined by comparing the magnitude of changes in client credit risk scores across delivery channels, pre and post-counseling.

## **The Use of Telephone and Internet Technology in Counseling Service Delivery**

The CCCS was established in 1964 on the principles of professional, caring, confidential and objective advice for consumers facing a financial crisis. In those early days, consumers who needed counseling assistance traveled by automobile or bus to the agency's main office in order to meet face-to-face with a counselor and discuss their financial difficulties.

Over the next 4 decades, the demands on consumer's time and the complexity of their lives steadily increased. The agency has worked to remain available and relevant to consumers by continually adapting its services to better meet their schedules, learning styles and preferences. The first step was to build a network of branch locations across its service area to support face-to-face counseling efforts. In 1997, the agency added telephone counseling as a way to make access to counseling services more convenient and to safely expand service hours beyond the traditional business hours. In 1999, CCCS started its first counseling via the Internet and expanded counseling hours to 24 hours a day/7 days a week for both telephone and Internet counseling. By offering more choices on how and when to receive service, the agency dramatically expanded the numbers of consumers reached each year. As of December 2008, more than two thirds of the agency's counseling work was delivered over the telephone and via the Internet.

### *Incorporating a Standardized Process*

Despite the increase in service delivery channels, the core processes, information and values have remained consistent across all the delivery methods. The agency states that it takes a holistic view of the client and their situation, so that in every session, counselors work with clients to:

- Identify the immediate problem and root cause of the financial issues;
- Assess the client's housing situation, in order to sustain a safe, stable home;
- Review income and expenses, in order to build a realistic budget & spending plan;
- Identify assets and liabilities, in order to understand the depth of the overall problem; and
- Present options for dealing with problems and reaching client goals, in order to help them make an informed choice.

At the end of each counseling session, the agency offers a variety of follow-up, support and educational opportunities to help clients convert their choices into action.

Each service delivery method – face-to-face, telephone and Internet – has its own relative strengths and weaknesses. Table 1 details the advantages of the different delivery channels in helping clients with particular preferences or needs. By offering clients a choice of delivery method, the CCCS reduces many of the obstacles to clients seeking help. The agency also offers clients the opportunity to switch between methods whenever they choose to do so. Despite the differences between delivery methods, the purported goal of every session is the same – engagement between clients and caring, professional counselors working through a standardized process.

### *How Internet Counseling Works*

CCCS maintains that effective counseling requires consumer engagement and interaction with a certified counselor. They have incorporated this interaction into their Internet counseling model with a two step process – mandatory Live Chat with a counselor throughout the online session and a secondary offline review by another counselor at the end of the process to ensure the initial recommendations and options address the client’s issues.

In addition to providing consumer-counselor interaction, counseling via the Internet offers several benefits versus telephone and face-to-face counseling that help to overcome consumer reluctance to participate in counseling. These include:

- **Convenience:** Time-constrained consumers can access help from any location and at any time of the day, avoiding travel time and costs. Clients can start and stop their sessions as needed. Also, clients can begin their counseling session immediately, versus waiting 3 to 5 days for a scheduled appointment.
- **Organization:** The stress of a financial crisis often results in poor recordkeeping and/or limited awareness of many important financial details. CCCS has found that in face-to-face meetings, clients often lack the necessary information to complete their counseling session, which requires them to follow-up with their counselor at a later time. Online, clients can take as much time as they need to collect any required information.
- **Anonymity:** For those who may be hesitant to face another person or talk over the phone about their financial distress, the Internet offers them a comfortable degree of anonymity.
- **Learning Style:** For visual learners, the website and online counseling process is user-friendly and offers the ability to see, read and think about questions and move forward at the client’s own pace. Help and support is readily available through a Live Chat with a counselor who helps the client complete the session.

Table 1: Challenges for Consumers Seeking Counseling

Challenge	Delivery Method			
	General Requirement	Face-to-Face	Telephone	Web
<b>Time Required To Complete Counseling Session</b>	The average counseling session takes 60 minutes to complete.	Session takes the average time for counseling. Also requires extra time to travel to and from the counseling office.	Session takes the average time for counseling, but no extra time for travel.	Session takes the average time for counseling, but no extra time for travel. Added flexibility that the client can stop and restart the session at their convenience.
<b>Hours Available for Counseling</b>	The client must fit the counseling session into the service provider's operating hours.	Available during standard business hours, Monday to Friday, 8 AM to 5 PM. Little extended hour availability. Limited capacity at locations.	Available 24 hours a day, 7 days a week. Additional capacity at any time of day.	Available 24 hours a day, 7 days a week. Additional capacity at any time of day.
<b>Location</b>	The client must find a way to access service.	Locations evenly distributed across geographic footprint, but no offices outside that area.	Requires access to a telephone, which can be located anywhere.	Requires access to a computer, which can be located anywhere, and the Internet.
<b>Learning Style</b>	Each client processes information according to their learning style.	Offers the fullest way for consumers to interact, using both visual, verbal and non-verbal communication.	Requires good verbal and listening communication skills. No ability for nonverbal communication during session.	Predominantly visual learning and reading, plus written communication via Live Chat.
<b>Emotional Issues</b>	The client must deal with a wide array of emotions – shame, guilt, shock, embarrassment – before seeking help.	Requires client to face the counselor in person, an emotionally challenging and difficult format. Offers the opportunity for personal support and affirmation by the counselor.	Offers more anonymity and privacy than face-to-face counseling, but still requires the client to verbalize their situation.	Provides the most anonymous and private process, with the client controlling the interaction.
<b>Organization</b>	The client must have a basic level of preparedness and organization to receive counseling.	Client needs to be well organized and bring all required information and paperwork to the counseling session.	Slightly more flexible, as the client has the ability to search for and provide missing information if they are calling from home.	Clients enter information into the system and can stop/restart at their convenience, allowing them the ability to get documents or information as needed.

## Key Features of the Data

The analysis starts with a dataset of all CCCS clients who were counseled in either March or April of 2004, 2005 2006, or 2007.<sup>1</sup> Table 2 indicates the number of such clients counseled over the two-month period for each year. The table subdivides clients by line of service (i.e., product line). Note that with the advent of bankruptcy reform in late 2005, the new federal bankruptcy law resulted in the introduction of two new services lines: Bankruptcy (pre-filing) counseling and Bankruptcy Education. The significantly larger client volume in 2006 and 2007 reflect these new products, plus two additional service lines that were introduced for housing and general education.

Table 2: Sample of Clients by Date of Last Appointment and Line of Service

Line of Service	Year of Last Appointment			
	2004	2005	2006	2007
Bankruptcy			20,491	26,447
Bankruptcy Education			7,407	14,491
Budgeting	7,982	7,489	6,699	8,347
Housing			472	399
General Education			1,082	2,967
<b>Total</b>	<b>7,982</b>	<b>7,489</b>	<b>36,151</b>	<b>52,651</b>

Table 3 indicates the distribution of clients across service delivery method. Excluded from Table 3 are the general education and bankruptcy education products. For the general education service, the delivery channel was face-to-face in 99% of the cases, and internet delivery channel was reported for the handful of remaining cases. For the bankruptcy education service line, the internet was the delivery channel for 97% of the clients and was unreported for the remaining clients.

<sup>1</sup> Clients were selected into the sample if their last counseling appointment occurred during March or April of each respective year.

**Table 3: Last Appointment Service Delivery**

CCCS Delivery Channel	Year of Last Appointment			
	2004	2005	2006	2007
Bankruptcy Service Line				
Face To Face Immediate			94	90
Internet			16,808	21,124
NA			3	91
Telephone			3,586	5,142
<b>Total</b>			<b>20,491</b>	<b>26,447</b>
Budgeting Service Line				
Face To Face Immediate	1,825	1,900	1,304	1,449
Internet	18	13		
Internet	1,012	821	1,604	1,299
NA	377	407	99	211
Telephone	4,750	4,348	3,692	5,388
<b>Total</b>	<b>7,982</b>	<b>7,489</b>	<b>6,699</b>	<b>8,347</b>
Housing Service Line				
Face To Face Immediate			136	77
Internet			5	81
NA			3	9
Telephone			938	2,800
<b>Total</b>			<b>1,082</b>	<b>2,967</b>

Table 4 focuses on the distribution of all clients (regardless of counseling product) across the three key delivery methods: telephone, face to face, and internet. Equifax, Inc. provided credit report data for clients that could be matched to its database. Table 4 shows that clients who were counseled either in-person or by telephone were less likely to be found in the Equifax database than were clients counseled through the internet. This suggests either that individuals who contact CCCS via the internet supply more complete and reliable personal identification information, or that such individuals actually differ in important ways (e.g., mobility and change of address; change in marital status) from clients who contact CCCS in person or via the telephone.

**Table 4: Match of CCCS Sample to Equifax Credit Bureau  
Data By Delivery Method**

CCCS Delivery Channel	Match Status with Equifax		Total	Percent Matched
	Matched to Equifax Data	Not Matched to Equifax Data		
Face To Face	6179	696	6875	89.9%
Internet	62778	1264	64042	98.0%
Telephone	28,791	1,853	30,644	94.0%
<b>Total</b>	<b>97,748</b>	<b>3,813</b>	<b>101,561</b>	<b>96.2%</b>

Some individuals matched to the Equifax credit bureau files did not have risk scores computed for some or all the years between 2004 and 2007. Table 5 indicates the percent of individuals matched to the Equifax data for whom risk scores were available, by year of the last appointment. Note that the number with missing risk scores increased over time across all delivery channels, suggesting that the composition of clients was changing during this period.

**Table 5: Percent of Clients Matched to Equifax Data For Whom Risk  
Score Data Available In Year of Last Appointment**

CCCS Delivery Channel	Year of Last Appointment				Total
	2004	2005	2006	2007	
Face To Face	96.1%	94.9%	94.4%	92.5%	94.5%
Internet	97.1%	96.9%	92.6%	91.6%	92.1%
Telephone	96.9%	96.0%	93.9%	94.0%	94.7%
<b>Total</b>	<b>96.7%</b>	<b>95.8%</b>	<b>92.9%</b>	<b>92.2%</b>	<b>93.0%</b>

## Descriptive Statistics on Credit Scores and Demographic Characteristics

Tables 6, 7 and 8 explore client characteristics by product lines and delivery channels. Table 6 provides average risk score statistics for budget counseling clients who were counseled during either 2005 or 2006. The table reports risk score levels one year prior to counseling, at the time of counseling and one year following counseling, as well as changes in those scores. As expected, the average client score falls during the year prior to counseling and increases in the year following counseling.

Table 7 focuses on clients counseled during 2006 and compares scores for clients across product lines. The comparison reveals several interesting features. First, and perhaps not surprisingly, the drop in the scores prior to the last appointment was somewhat greater for those using the bankruptcy service. But, these clients also experience a dramatic increase in their scores during the year following counseling.<sup>2</sup> Note also that clients in the bankruptcy education service line, like clients in the bankruptcy service line, experienced an increase in the average score following counseling that was well above that experienced by those using other counseling services.

With respect to both risk and bankruptcy scores, Table 6 indicates that in both 2005 and 2006, the average Internet client had a higher risk score one year prior to counseling, relative to clients in other channels. In addition, at the time of their last appointment, Internet clients had experienced the largest reduction in their risk score during the prior year, relative to other clients. Finally, among clients counseled in 2005, those who were counseled via the Internet channel had the smallest average increase in their risk score during the year following counseling. However, in 2006 the average increase for those using the Internet channel exceeded that of clients who were counseled face-to-face. With respect to bankruptcy scores, the Internet channel was either the second best (2005) or best (2006) among the three channels in terms of the average increase in the year following the last counseling appointment.

Of course, the above discussion is based solely on an analysis of average scores across delivery channels. Such average scores do not account for the possibility that, at the time of counseling, clients may differ in the potential for counseling to improve their credit scores, and that this characteristic may not be randomly distributed in clients across delivery channels. For instance, Table 6 indicates that internet clients tend to have higher initial credit scores. Table 8 identifies demographic differences across clients by delivery channel. For example, among budget counseling clients, individuals who use the internet tend to be younger, have much higher monthly income, and report substantially greater holdings of both assets and unsecured debt.

The above differences in characteristics of individuals by choice of delivery channel mean that a simple inspection of mean differences in score changes across delivery channels may not accurately reflect the effectiveness of different channels. To further explore this issue, we consider the relationship between delivery channel and subsequent risk scores using multivariate regression techniques that utilize available information to account for factors other than delivery channel that may also influence credit score changes.

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<sup>2</sup> A peculiar result is that clients using the bankruptcy education service had already experienced an increase in their bankruptcy score (but not their risk score) in the year prior to their last counseling appointment.

**Table 6: Changes in Risk and Bankruptcy Scores From Preceding Year and Over Following Year by Delivery Channel For Clients in Budgeting Service Line**  
**For Clients With Last Appointment in 2005 and in 2006**

	<b>Risk Scores</b>		<b>Bankruptcy Scores</b>	
	2005 Appointment Year	2006 Appointment Year	2005 Appointment Year	2006 Appointment Year
<b>CCCS Delivery Channel</b>				
<b>Face To Face</b>				
Prior year score	574.5	584.2	179.0	185.0
Score in year of appointment	546.4	550.2	156.0	158.2
Following year score	564.2	563.1	182.0	177.8
Number of observations	1,524	1,161	1,542	1,180
Change in score from prior year	-28.1	-34.0	-23.0	-26.8
Change in score in following year	17.8	12.9	26.0	19.6
<b>Internet</b>				
Prior year score	607.0	607.6	182.9	184.1
Score in year of appointment	568.7	555.4	151.4	141.5
Following year score	578.9	570.2	178.2	170.2
Number of observations	776	1,479	784	1,486
Change in score from prior year	-38.3	-52.2	-31.5	-42.6
Change in score in following year	10.2	14.8	26.8	28.7
<b>Telephone</b>				
Prior year score	574.3	586.5	171.9	181.9
Score in year of appointment	543.8	546.4	150.8	153.6
Following year score	565.4	562.8	179.1	173.4
Number of observations	3,683	3,339	3,706	3,381
Change in score from prior year	-30.5	-40.1	-21.1	-28.3
Change in score in following year	21.6	16.4	28.3	19.8
<b>Overall</b>				
Prior year score	578.6	591.3	175.2	183.0
Score in year of appointment	547.7	549.4	152.2	151.5
Following year score	566.9	564.7	179.7	173.4
Number of observations	5,983	5,979	6,032	6,047
Change in score from prior year	-30.9	-41.9	-23.0	-31.5
Change in score in following year	19.2	15.3	27.5	21.9

Samples restricted to clients with face-to-face, telephone, or internet delivery channel who had matched risk scores for the appointment year and the years prior and subsequent to that year. For comparability across years, we focus only on clients in the budgeting service line.

Table 7: Changes in Risk and Bankruptcy Scores by Service Line for Clients  
With Last Appointment in 2006

Service Line	Risk Scores	Bankruptcy Scores
<b>Budgeting Service Line</b>		
Prior year score	591.3	183.0
Score in year of appointment	549.4	151.5
Following year score	564.7	173.4
Number of observations	5,979	6,047
Change in score from prior year	-41.9	-31.5
Change in score in following year	15.3	21.9
<b>Housing Service</b>		
Prior year score	575	187.4
Score in year of appointment	544.7	162.9
Following year score	555.1	172.7
Number of observations	956	965
Change in score from prior year	-30.3	-24.5
Change in score in following year	10.4	9.8
<b>Bankruptcy Service</b>		
Prior year score	568	159
Score in year of appointment	511.4	124.7
Following year score	567.5	195.8
Number of observations	18,890	19,050
Change in score from prior year	-56.6	-34.3
Change in score in following year	56.1	71.1
<b>Bankruptcy Education Service</b>		
Prior year score	582.3	162.0
Score in year of appointment	550.2	188.5
Following year score	594.8	235.2
Number of observations	5,932	5,978
Change in score from prior year	-32.1	26.5
Change in score in following year	44.6	46.7
<b>Total</b>		
Prior year score	575.3	164.9
Score in year of appointment	526.8	142.8
Following year score	571.7	198.2
Number of observations	31,757	32,040
Change in score from prior year	-48.5	-22.1
Change in score in following year	44.9	55.4

Samples restricted to clients with face-to-face, telephone, or internet delivery channel who had matched risk scores for the appointment year and the years prior and subsequent to that year. Excluded is the general education service line, as only 4 observations of matched data were available across the three delivery channels for this service line.

Table 8: Demographic Differences by Delivery Channel For Clients in Budgeting and Bankruptcy Service Lines

For Clients With Last Appointment in 2005 and in 2006

	Average age	Percent married	Average net income (monthly)	Percent buying or owning home	Average total assets	Percent with no assets reported	Average unsecured debt for those reporting such debt	Percent not reporting unsecured debt	Percent using channel
<b>Last Appointment in 2005, Budgeting Line</b>									
Face To Face	44.1	43.2%	\$1,515	33.2%	\$36,695	65.8%	\$19,917	49.0%	25.5%
Internet	38.0	59.6%	\$2,857	34.7%	\$106,665	16.0%	\$25,730	1.0%	13.0%
Telephone	43.5	47.6%	\$1,836	40.3%	\$51,195	54.3%	\$18,755	38.3%	61.6%
<b>Last Appointment in 2006, Budgeting Line</b>									
Face To Face	45.1	43.4%	\$1,158	24.2%	\$33,577	71.7%	\$24,164	47.3%	19.4%
Internet	39.2	51.2%	\$2,522	50.8%	\$108,433	19.8%	\$30,937	2.8%	24.7%
Telephone	44.6	47.9%	\$1,429	28.8%	\$43,032	61.9%	\$23,120	36.9%	55.8%
<b>Last Appointment in 2006, Bankruptcy Line</b>									
Face To Face	46.6	51.4%	\$1,905	23.6%	\$26,544	69.4%	\$37,525	48.6%	0.4%
Internet	43.1	50.3%	\$2,095	49.9%	\$86,700	16.9%	\$47,177	1.9%	82.9%
Telephone	49.1	37.9%	\$1,970	41.6%	\$44,425	52.7%	\$36,073	14.8%	16.7%

Samples restricted to clients with face-to-face, telephone, or internet delivery channel who had matched risk scores for the appointment year and the years prior and subsequent to that year. For each level variable, statistics computed using non-missing values.

## Regression Analysis of the Impact of Delivery Channel on Credit Scores

Our regression analysis of the effect of delivery channel on credit scores considers two types of products provided by the counseling agency, the budget counseling product and the more recent bankruptcy counseling product.

### *Budget Counseling Product*

Tables 9A and 9B report regression results that consider the effect of delivery channel (Internet or telephone versus face-to-face) on changes in delinquency risk scores for clients in the budget counseling product. Table 9A considers clients having their last counseling appointment in 2005. Table 9B considers clients having their last counseling appointment in 2006. Tables 10A and 10B examine bankruptcy scores in similar fashion.

In this analysis, various regression model specifications allow for circumstances other than delivery channel to influence risk score changes. For example, in examining the factors that determine changes in scores during the year leading up to the client's last appointment (column A in each table), we utilize several variables in addition to the delivery channel, including variables that identify home ownership, age, marital status, reported assets holdings, reported level of unsecured debt, reported net income, the client's credit score at the time of counseling, and the counselor's assessment of the client's financial condition as evidenced by the counselor's recommended action step. To account for a potential non-linear relationship between the initial risk score and subsequent change in risk score, the model includes both the initial score and the squared value of the initial score.

In the regression models that examine the change in the risk scores in the year following counseling, we report several specifications that vary in the types of variables used to account for client characteristics. The simplest specification includes only the delivery channel (column B); the second specification adds variables indicating the counselor's recommendation (column C); the third specification includes various demographic variables (column D); the fourth specification includes all preceding variables plus the client's risk score at the time of the last counseling appointment, both its level and its squared value (column E); the final specification include all of the preceding plus the change in the level of the risk score over the year prior to the last counseling appointment (column F). For clients in the budget counseling product, the excluded delivery channel is face-to-face. That is, the coefficients on the variables for Internet and telephone counseling indicate change in the dependent variable relative to face-to-face delivery.

The results reported in Tables 9A and 9B show how interpretation of results can change when additional information is incorporated into the analysis. A short discussion of some selected results will help to illustrate. Both Tables 9A and 9B are modeling the factors that determine "change" in a client's risk score following counseling. A negative sign on a reported variable's coefficient means that as that variable rises in value, the change in the client's credit score is smaller. A positive coefficient sign means that as the variable rises in value, the change in the client's credit score is larger. We know from Table 6 that, on average, budget counseling client credit scores increased after counseling. So, for example, the negative and significant coefficient on the Internet variable in column D of Table 9A appears to suggest that Internet clients in 2005 experienced a smaller change (increase) in risk scores after counseling, relative to telephone and face-to-face clients. However, we also know from Table 6 that, on average, Internet clients in 2005 had higher scores at the time of counseling, relative to clients in the other channels. After including that "initial score" information in column E of Table 9A, we find that ***there is no statistically significant effect of either the Internet or the telephone delivery channel on subsequent changes in the risk score, as compared to face-to-face delivery.***

As for the influence of the other explanatory variables in the fully specified model for clients counseled in 2005 (column F, Table 9A), those clients who were older or had higher net incomes experienced larger increases in risk scores following counseling, other things equal. Homeowners had significantly smaller increases in their scores. Interestingly, the level of unsecured debt at the time of counseling has no significant impact on subsequent change in credit score, after accounting for the other variables in the model.

These results on delivery channel turn out to be quite robust. The analysis of risk scores for clients counseled in 2006 as reported in Table 9B indicates similar results across all variables, and finds no significant impact of delivery channel on subsequent scores after controlling for other variables (column F, Table 9B). Shifting to an examination of bankruptcy risk scores does not change the conclusion. The full specification of the models explaining the post-counseling change in bankruptcy risk scores displayed in Tables 10A and 10B reveal no significant impact of delivery channel on subsequent scores, other things equal.

### *Bankruptcy Counseling Product*

For clients in the bankruptcy (pre-filing) counseling product, Tables 11 and 12 consider the effect of delivery channel (in this case only Internet versus telephone) on changes in delinquency risk scores (Table 11) or bankruptcy risk scores (Table 12). Both tables consider only clients who had their last counseling appointment during 2006. The excluded delivery channel in these regression models is telephone delivery, meaning that the coefficient on the Internet variable indicates change in the dependent variable relative to telephone delivery. Note that for clients in this product line, the various counselor recommendation variables are excluded, as the overwhelming majority of results were classified as financial counseling only.

Columns D and E of both Tables 11 and 12 represent the full specification of the regression models, including demographic variables plus information on the client's risk score at the time of counseling and one year prior to counseling. The statistically significant coefficient on the Internet delivery variable in columns D and E in both tables indicates that ***clients using the internet channel tend to have a larger increase (improvement) in risk scores in the year following counseling even when one controls for differences in demographic variables and risk scores at the time of counseling.***

Table 9A: Factors Associated with Changes in Delinquency Risk Score From Prior Year and in Year Following Client's Last Appointment: 2005 Sample of Clients in Budgeting Service Line

	A	B	C	D	E	F
	Change in risk score in year prior to 2005	Change in risk score in year following 2005	Change in risk score in year following 2005	Change in risk score in year following 2005	Change in risk score in year following 2005	Change in risk score in year following 2005
Internet delivery channel	-11.571 (3.30)***	-7.844 (2.24)**	-11.446 (3.12)***	-12.599 (3.23)***	-2.069 (0.63)	-2.754 (0.85)
Telephone delivery channel	-0.311 (0.14)	3.810 (1.57)	3.194 (1.31)	2.893 (1.18)	1.078 (0.53)	1.060 (0.52)
Result: debt management plan	-14.049 (4.95)***		8.239 (2.67)***	6.333 (2.00)**	-1.923 (0.73)	-2.755 (1.04)
Result: client can handle	-5.057 (0.87)		-2.660 (0.42)	-0.921 (0.14)	10.176 (1.89)*	9.877 (1.84)*
Result: referred to legal agency	-9.188 (1.95)*		12.985 (2.54)**	16.159 (3.09)***	4.267 (0.98)	3.723 (0.85)
Result: referred to other agency	-20.942 (1.63)		4.445 (0.31)	7.684 (0.54)	2.116 (0.18)	0.876 (0.07)
Result: NA	-5.516 (1.23)		-5.789 (2.21)**	1.511 (0.30)	-7.002 (1.67)*	-7.329 (1.75)*
Client total assets	-0.030 (2.51)**			0.006 (0.45)	0.008 (0.69)	0.006 (0.53)
Client has no assets	-2.094 (0.81)			-2.089 (0.73)	1.139 (0.48)	1.015 (0.43)
Client total unsecured debt	-0.001 (10.75)***			-0.000 (3.85)***	0.000 (0.59)	-0.000 (0.10)
Client unsecured debt level missing	5.407 (1.77)*			-6.806 (2.00)**	-5.074 (1.79)*	-4.754 (1.68)*
Client net income	0.002 (3.02)***			0.003 (3.54)***	0.003 (4.07)***	0.003 (4.27)***
Client married household	3.679 (1.56)			0.058 (0.02)	2.564 (1.17)	2.782 (1.27)
Client age at time of interview	0.162 (1.82)*			0.040 (0.41)	0.499 (6.02)***	0.508 (6.14)***
Client age missing	-2.367 (0.41)			2.930 (0.46)	30.758 (5.70)***	30.618 (5.69)***
Client owns or is buying a home	-13.128 (5.37)***			-3.653 (1.34)	-5.565 (2.45)**	-6.342 (2.79)***
Client's risk score, 2005	2.278 (27.87)***				-1.861 (24.47)***	-1.726 (21.39)***
Client's score, 2005, squared	-0.002 (22.75)***				0.001 (19.13)***	0.001 (17.00)***
Client's prior change in score, 2005						-0.059 (4.92)***
Constant	-747.308 (32.76)***	17.901 (8.79)***	18.376 (7.83)***	16.987 (3.12)***	602.822 (28.41)***	558.568 (24.28)***
Observations	5979	5979	5979	5979	5979	5979
R-squared	0.33	0.00	0.01	0.01	0.31	0.31

Absolute value of t statistics in parentheses; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Samples restricted to clients with face-to-face, telephone, or internet delivery channel who had matched risk scores for the appointment year and the years prior and subsequent to that year.

Table 9B: Factors Associated with Changes in Delinquency Risk Score From Prior Year and in Year Following Client's Last Appointment: 2006 Samples of Clients in Budgeting Service Line

	A	B	C	D	E	F
	Change in risk score in year prior to 2006	Change in risk score in year following 2006	Change in risk score in year following 2006	Change in risk score in year following 2006	Change in risk score in year following 2006	Change in risk score in year following 2006
Internet delivery channel	-10.558 (3.36)***	1.903 (0.61)	-0.440 (0.13)	-1.490 (0.43)	0.910 (0.31)	0.192 (0.06)
Telephone delivery channel	-1.460 (0.59)	3.399 (1.25)	3.078 (1.13)	2.792 (1.03)	0.096 (0.04)	-0.003 (0.00)
Result: debt management plan	-11.772 (3.95)***		6.129 (1.89)*	5.971 (1.82)*	-0.484 (0.17)	-1.285 (0.46)
Result: client can handle	13.386 (1.70)*		-12.371 (1.46)	-9.409 (1.08)	7.666 (1.03)	8.577 (1.16)
Result: referred to legal agency	-8.438 (2.15)**		8.562 (2.02)**	7.852 (1.82)*	-2.212 (0.60)	-2.786 (0.75)
Result: referred to other agency	15.942 (0.49)		-60.024 (1.69)*	-59.223 (1.66)*	-33.633 (1.11)	-32.549 (1.07)
Result: NA	-0.918 (0.18)		-2.310 (0.92)	5.734 (1.04)	-4.822 (1.02)	-4.885 (1.03)
Client total assets	-0.021 (1.99)**			-0.034 (2.88)***	-0.028 (2.77)***	-0.029 (2.92)***
Client has no assets	5.620 (1.92)*			-3.278 (1.01)	-5.144 (1.86)*	-4.762 (1.73)*
Client total unsecured debt	-0.000 (8.05)***			0.000 (1.07)	0.000 (1.44)	0.000 (0.86)
Client unsecured debt level missing	3.263 (0.91)			-7.493 (1.88)*	-3.939 (1.16)	-3.717 (1.10)
Client net income	0.002 (2.52)**			-0.002 (2.25)**	0.000 (0.47)	0.001 (0.66)
Client married household	1.318 (0.50)			-0.566 (0.20)	1.500 (0.61)	1.589 (0.64)
Client age at time of interview	-0.203 (2.14)**			-0.137 (1.32)	0.287 (3.21)***	0.273 (3.06)***
Client age missing	-14.863 (2.23)**			-12.177 (1.67)*	19.167 (3.05)***	18.156 (2.90)***
Client owns or is buying a home	-17.984 (6.13)***			3.949 (1.22)	5.119 (1.85)*	3.895 (1.41)
Client's risk score, 2006	2.423 (28.89)***				-1.791 (22.64)***	-1.626 (19.30)***
Client's score, 2006, squared	-0.002 (23.33)***				0.001 (17.78)***	0.001 (15.45)***
Client's prior change in score, 2006						-0.068 (5.58)***
Constant	-799.592 (34.25)***	12.964 (5.55)***	13.360 (4.89)***	26.931 (4.52)***	590.472 (26.82)***	536.069 (22.31)***
Observations	5979	5979	5979	5979	5979	5979
R-squared	0.36	0.00	0.00	0.01	0.28	0.28

Absolute value of t statistics in parentheses; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Samples restricted to clients with face-to-face, telephone, or internet delivery channel who had matched risk scores for the appointment year and the years prior and subsequent to that year.

Table 10A: Factors Associated with Changes in Bankruptcy Risk Score From Prior Year and in Year Following Client's Last Appointment: 2005 Sample of Clients in Budgeting Service Line

	A	B	C	D	E	F
	Change in risk score in year prior to 2005	Change in risk score in year following 2005	Change in risk score in year following 2005	Change in risk score in year following 2005	Change in risk score in year following 2005	Change in risk score in year following 2005
Internet delivery channel	-8.942 (3.12)***	0.526 (0.17)	-1.434 (0.44)	-6.340 (1.86)*	-2.585 (0.83)	-3.264 (1.06)
Telephone delivery channel	3.723 (2.07)**	2.240 (1.05)	2.113 (0.98)	1.703 (0.80)	-0.242 (0.12)	0.041 (0.02)
Result: debt management plan	-7.473 (3.21)***		2.057 (0.75)	0.414 (0.15)	-3.416 (1.36)	-3.984 (1.58)
Result: client can handle	-4.441 (0.93)		-8.520 (1.53)	-4.028 (0.71)	1.429 (0.28)	1.092 (0.21)
Result: referred to legal agency	-0.571 (0.15)		30.335 (6.69)***	21.316 (4.64)***	9.780 (2.34)**	9.736 (2.33)**
Result: referred to other agency	-9.019 (0.85)		-7.658 (0.60)	-5.680 (0.45)	-7.565 (0.66)	-8.251 (0.72)
Result: NA	-0.645 (0.18)		-6.434 (2.78)***	4.453 (1.02)	-4.585 (1.15)	-4.634 (1.17)
Client total assets	-0.014 (1.46)			0.008 (0.65)	0.001 (0.06)	-0.000 (0.04)
Client has no assets	-2.698 (1.28)			-4.336 (1.73)*	-0.650 (0.29)	-0.856 (0.38)
Client total unsecured debt	-0.000 (1.38)			0.000 (7.48)***	0.000 (5.62)***	0.000 (5.54)***
Client unsecured debt level missing	2.382 (0.95)			-4.244 (1.43)	-4.702 (1.73)*	-4.521 (1.67)*
Client net income	0.003 (4.89)***			0.001 (0.76)	-0.001 (0.88)	-0.000 (0.54)
Client married household	4.269 (2.20)**			-2.922 (1.27)	-1.374 (0.65)	-1.049 (0.50)
Client age at time of interview	0.197 (2.68)***			0.074 (0.86)	0.423 (5.33)***	0.438 (5.53)***
Client age missing	9.285 (1.96)*			8.363 (1.49)	21.692 (4.23)***	22.398 (4.38)***
Client owns or is buying a home	-6.812 (3.37)***			7.174 (3.00)***	-1.369 (0.63)	-1.887 (0.86)
Client's bankruptcy score, 2005	0.630 (22.54)***				-0.618 (20.43)***	-0.570 (18.14)***
Client's score, 2005, squared	-0.001 (10.54)***				0.001 (9.37)***	0.001 (8.57)***
Client's prior change in score, 2005						-0.076 (5.46)***
Constant	-106.500 (22.65)***	26.121 (14.50)***	26.602 (12.85)***	15.855 (3.33)***	81.764 (16.07)***	73.667 (13.93)***
Observations	6028	6028	6028	6028	6028	6028
R-squared	0.22	0.00	0.01	0.03	0.20	0.21

Absolute value of t statistics in parentheses; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Samples restricted to clients with face-to-face, telephone, or internet delivery channel who had matched risk scores for the appointment year and the years prior and subsequent to that year.

Table 10B: Factors Associated with Changes in Bankruptcy Risk Score From Prior Year and in Year Following Client's Last Appointment: 2006 Sample of Clients in Budgeting Service Line

	A	B	C	D	E	F
	Change in risk score in year prior to 2006	Change in risk score in year following 2006	Change in risk score in year following 2006	Change in risk score in year following 2006	Change in risk score in year following 2006	Change in risk score in year following 2006
Internet delivery channel	-7.685 (2.90)***	9.140 (3.22)**	4.335 (1.43)	3.069 (0.98)	1.367 (0.47)	0.934 (0.32)
Telephone delivery channel	0.997 (0.48)	0.279 (0.11)	0.187 (0.08)	-0.475 (0.19)	-2.092 (0.92)	-2.036 (0.90)
Result: debt management plan	-7.388 (2.94)***		-6.038 (2.04)**	-5.656 (1.90)*	-7.653 (2.78)***	-8.070 (2.94)***
Result: client can handle	6.666 (1.02)		-8.879 (1.18)	-5.103 (0.66)	8.609 (1.21)	8.985 (1.26)
Result: referred to legal agency	-0.156 (0.05)		17.522 (4.53)***	12.796 (3.27)***	4.231 (1.17)	4.223 (1.17)
Result: referred to other agency	-3.991 (0.15)		-23.039 (0.71)	-19.752 (0.61)	-16.351 (0.55)	-16.576 (0.56)
Result: NA	1.759 (0.42)		-9.027 (3.95)***	4.592 (0.93)	-1.876 (0.41)	-1.777 (0.39)
Client total assets	-0.027 (3.01)***			-0.041 (3.85)***	-0.035 (3.60)***	-0.037 (3.75)***
Client has no assets	-3.345 (1.36)			-8.332 (2.86)***	-5.442 (2.02)**	-5.631 (2.09)**
Client total unsecured debt	-0.000 (2.37)**			0.000 (6.26)***	0.000 (3.68)***	0.000 (3.56)***
Client unsecured debt level missing	2.194 (0.72)			-3.812 (1.06)	-2.842 (0.86)	-2.718 (0.82)
Client net income	0.003 (3.77)***			-0.001 (1.34)	-0.001 (1.09)	-0.001 (0.89)
Client married household	8.490 (3.84)***			2.530 (0.97)	2.039 (0.84)	2.517 (1.04)
Client age at time of interview	0.029 (0.36)			0.247 (2.63)***	0.443 (5.09)***	0.445 (5.11)***
Client age missing	4.901 (0.88)			6.987 (1.06)	15.812 (2.60)***	16.088 (2.65)***
Client owns or is buying a home	-4.609 (1.85)*			6.342 (2.16)**	-1.202 (0.44)	-1.462 (0.54)
Client's bankruptcy score, 2006	0.773 (25.67)***				-0.608 (18.46)***	-0.564 (16.29)***
Client's score, 2006, squared	-0.001 (12.75)***				0.001 (8.80)***	0.001 (8.05)***
Client's prior change in score, 2006						-0.056 (4.01)***
Constant	-119.548 (22.98)***	19.535 (9.21)**	23.533 (9.50)***	13.910 (2.58)***	79.133 (13.92)***	72.393 (12.23)***
Observations	6047	6047	6047	6047	6047	6047
R-squared	0.26	0.00	0.01	0.02	0.17	0.17

Absolute value of t statistics in parentheses; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Samples restricted to clients with face-to-face, telephone, or internet delivery channel who had matched risk scores for the appointment year and the years prior and subsequent to that year.

Table 11: Factors Associated with Changes in Delinquency Risk Score From Prior Year and in Year Following Client's Last Appointment: 2006 Sample of Clients in Bankruptcy Service Line

	A	B	C	D	E
	Change in risk score in year prior to 2006	Change in risk score in year following 2006	Change in risk score in year following 2006	Change in risk score in year following 2006	Change in risk score in year following 2006
Internet delivery channel	-2.616 (1.46)	2.480 (1.57)	1.576 (0.91)	3.835 (3.30)***	3.355 (3.01)***
Client total assets, in \$1,000	0.001 (0.27)		-0.010 (3.02)***	-0.011 (4.91)***	-0.011 (5.04)***
Client has no assets	3.970 (2.34)**		-1.168 (0.71)	-2.349 (2.13)**	-1.620 (1.53)
Client total unsecured debt	-0.000 (5.39)***		0.000 (1.78)*	0.000 (2.63)***	0.000 (1.15)
Client unsecured debt level missing	1.153 (0.32)		-7.577 (2.15)**	-10.271 (4.37)***	-10.059 (4.46)***
Client net income	0.000 (0.66)		-0.000 (0.99)	-0.000 (1.39)	-0.000 (1.25)
Client net income missing	-7.418 (2.85)***		2.310 (0.91)	5.660 (3.35)***	4.298 (2.65)***
Client married household	-1.327 (1.02)		-5.165 (4.11)***	-0.247 (0.29)	-0.490 (0.61)
Client age at time of interview	-0.710 (14.07)***		-0.075 (1.57)	0.787 (24.06)***	0.657 (20.82)***
Client age missing	-27.819 (7.43)***		-6.841 (1.90)*	28.119 (11.58)***	23.014 (9.86)***
Client owns or is buying a home	-6.558 (4.59)***		1.933 (1.40)	-9.062 (9.78)***	-10.266 (11.54)***
Client's risk score, 2006	3.000 (49.95)***			-1.266 (32.49)***	-0.716 (17.99)***
Client's score, 2006, squared	-0.002 (39.54)***			0.001 (14.89)***	0.000 (3.71)***
Client's prior change in score, 2006					-0.184 (40.52)***
Constant	-940.599 (59.42)***	54.051 (37.61)***	60.851 (20.23)***	522.230 (50.85)***	349.601 (32.57)***
Observations	18890	18890	18890	18890	18890
R-squared	0.35	0.00	0.00	0.55	0.59

Absolute value of t statistics in parentheses; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Samples restricted to clients with telephone, or internet delivery channel who had matched risk scores for the appointment year and the years prior and subsequent to that year.

Table 12: Factors Associated with Changes in Bankruptcy Risk Score From Prior Year and in Year Following Client's Last Appointment: 2006 Sample of Clients in Bankruptcy Service Line

	A	B	C	D	E
	Change in bankruptcy Score in year prior to 2006	Change in bankruptcy Score in year prior to 2006	Change in bankruptcy score in year following 2006	Change in bankruptcy score in year following 2006	Change in bankruptcy score in year following 2006
Internet delivery channel	1.152 (0.84)	3.650 (2.20)*	6.312 (3.48)***	6.598 (4.43)***	6.741 (4.55)***
Client total assets, in \$1,000	0.003 (1.27)		-0.015 (4.38)***	-0.024 (8.38)***	-0.024 (8.29)***
Client has no assets	0.725 (0.55)		-2.781 (1.62)	0.249 (0.18)	0.339 (0.24)
Client total unsecured debt	-0.000 (0.04)		0.000 (5.42)***	0.000 (2.67)***	0.000 (2.68)***
Client unsecured debt level missing	-0.192 (0.07)		-11.735 (3.20)***	-13.393 (4.45)***	-13.417 (4.48)***
Client net income	0.000 (1.55)		0.000 (0.43)	-0.000 (1.04)	-0.000 (0.87)
Client net income missing	-2.537 (1.27)		7.821 (2.97)***	11.551 (5.34)***	11.237 (5.23)***
Client married household	2.764 (2.77)***		-6.087 (4.63)***	-6.539 (6.05)***	-6.196 (5.77)***
Client age at time of interview	-0.212 (5.50)***		0.711 (14.16)***	1.211 (29.07)***	1.185 (28.61)***
Client age missing	-3.299 (1.15)		23.639 (6.27)***	42.159 (13.56)***	41.750 (13.51)***
Client owns or is buying a home	-0.835 (0.75)		-4.557 (3.16)***	-24.580 (20.39)***	-24.684 (20.61)***
Client's bankruptcy score, 2006	0.906 (48.23)***			-0.827 (40.74)***	-0.715 (33.46)***
Client's score, 2006, squared	-0.001 (22.40)***			0.001 (8.79)***	0.000 (6.18)***
Client's prior change in score, 2006					-0.124 (15.92)***
Constant	-111.217 (41.43)***	67.997 (45.10)**	40.558 (12.93)***	119.842 (41.29)***	106.057 (35.23)***
Observations	19050	19050	19050	19050	19050
R-squared	0.28	0.00	0.02	0.34	0.34

Absolute value of t statistics in parentheses; \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Samples restricted to clients with telephone or internet delivery channel who had matched risk scores for the appointment year and the years prior and subsequent to that year.