Channel Perceptions and Usage: Beyond Media Richness Factors

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Abstract. In this paper, we asses how service channel perceptions affect channel choice and channel usage. Building on communication theories, such as the Media Richness Theory, we explore how different channel characteristics are perceived by citizens in a Dutch governmental service chain. The results of our study show that channel perceptions are variable along with channel usage (experience) and personal characteristics. This proves that the straightforward task-channel fit as suggested in some multi-channel management models is too simplistic. Besides the fact that theoretically some channels are better suited for particular types of services, multi-channel models should pay attention to the variances in channel perceptions. These insights are highly relevant for the design of the multi-channel and marketing strategies in order to seduce citizens to use the preferred service channels.

Keywords: channel choice, multi-channeling, e-Government, e-services.

1 Introduction

After the Internet hype in the early 2000's, it became clear that the Internet as a service channel was not going to replace other service channels [1]. Hence, both practitioners and theorists have been building new theories and models that do not rely on a single channel, but incorporate multiple channels [e.g. 2, 3]. These theories aim to exploit channel characteristics in order to improve both the quality of service delivery and its cost effectiveness. In marketing, most of these multi-channel management models focus on the relationship between the characteristics of a certain good or service and the channel characteristics. The basic idea is that there is a contingency between certain goods and channels which allows a match based on these characteristics. Berman [4], for example, has suggested that different types of goods require different sales channels. He shows that perishable goods require short channels (short in terms of time and effort) whereas non-perishable goods require long channels. He also indicates that high value goods should be sold via direct channels, whereas low-value goods are to be sold via the indirect channels.

The Media Richness Theory (MRT) [5] also posits that media or channels have a number of characteristics. Based on these characteristics a medium is either 'richer' or 'leaner'. The degree of richness of the channel determines its appropriateness for ambiguous or uncertain tasks. Critics of MRT, and this critique also applies to similar marketing theories, argue that while in MRT the channel characteristics are fixed, in reality, he concept 'media richness' only exists as a perception [6]. Channel Expansion Theory (CET) [7] corrects this theoretical anomaly and argues that when experience with a channel increases, its perceived richness increases as well. Only a few studies have tested this proposition, but all found general support of the effect of experience on channel perceptions and perceived richness [7, 8]. Another point of critique on theories such as MRT is that it remains unclear which characteristics define the 'richness' of a channel [9]. Our study adds to this discussion by (a) combining multiple channel characteristics from different theoretical perspectives and (b) determining how these characteristics are perceived by different customer groups. We empirically test these channel characteristics in the context of public service delivery. We investigate how users of the three main service channels - i.e., front-desk, telephone and website - perceive the different channel characteristics. We also show how these differences relate to personal characteristics and how these differences affect citizens' channel choices. Based on the results, conclusions are drawn regarding the implications of the findings for multichannel management and marketing strategies for the public sector.

2   Theoretical Background

Most important and well-known theory that describes differences between different media or channels is Media Richness Theory (MRT). The main difference, according to MRT, between communication media is that they vary in the capacity to process rich information [5]. The reason for these differences is that media vary in their capacity for immediate feedback, the number of cues and channels used, personalization, and language variety [10]. Immediate feedback means that one is able to respond immediately to a message, making it possible to check the messages' interpretation. The number of cues means there are different ways in delivering the message, via sound, video, but also via non-verbal communication or intonation. The degree of personalization applies to the possibility to adjust messages to the receiver, to increase understanding. Language variety, finally, applies to the possibility to change choice of words and language for the receiver.

Media vary in richness according to the differences on these four characteristics. Rich channels score high on the four characteristics, whereas lean channels lack those characteristics. Daft & Lengel [5] ranked the following (at that time most common) media in order of decreasing richness, face-to-face is the richest medium, followed by the telephone, personal documents, impersonal written documents and finally numeric documents. In 1990, electronic mail was retroactively fitted into the richness ranking and should be positioned just below the telephone, but higher than letters and notes [11]. Jackson & Purcell [12] discussed the richness of the World Wide Web, arguing that it is difficult to asses its richness because "Hypertext on the Web is too malleable

to be anchored at any one place on any of these - immediacy of feedback, number of cues, personalization, and language variety - dimensions" (p. 225).

Many studies on MRT have found mixed research findings [13, 14], this questions the validity of the theory and it's underlying theoretical notions. As mentioned above, two important points of critiques exist, these are the composition of the richness construct (or the channel characteristics) and the idea the MRT assumes that channel characteristics are fixed properties. In the next sections, these points of critique shall be discussed in more detail.

2.1 Channel Characteristics

Regarding the richness construct, it can be argued that more characteristics exist that determine the appropriateness of a channel for certain communication or service related purposes. El-Shinnawy & Markus [9] suggest three factors: functionality, usability and ease of use. In marketing research many studies have been conducted that study how channel characteristics relate to different types of services. Many of those characteristics bear similarity to those described in the theories above, such as the level of 'interactivity' [15], the personal focus or opportunity to clarify personal situations [16]. Marketing research suggest factors such as 'costs' [17], proximity or contact speed [18], and the level of service [19, 20]. Finally, a large stream of research has associated perceived ease of use and perceived usefulness, factors from the Technology Acceptance Model [21], with channel characteristics [22-24].

2.2 Channel Perceptions

Besides the issue which channel characteristics are relevant for communication and/or customer service purposes, the other point of critique on MRT is its rigidness towards those characteristics. The assumption of the MRT that channel characteristics are fixed is questionable. Lee [25] found that the richness of e-mail is not a fixed property. More likely medium richness is like a perception, depending on the interaction between the medium and the organizational context. Similarly, the Social Influence Model argues that media richness exists as a perception that is different for everyone and is influenced by others [6]. Channel Expansion Theory, finally, also argues that richness is a perception. It argues that the perceived richness
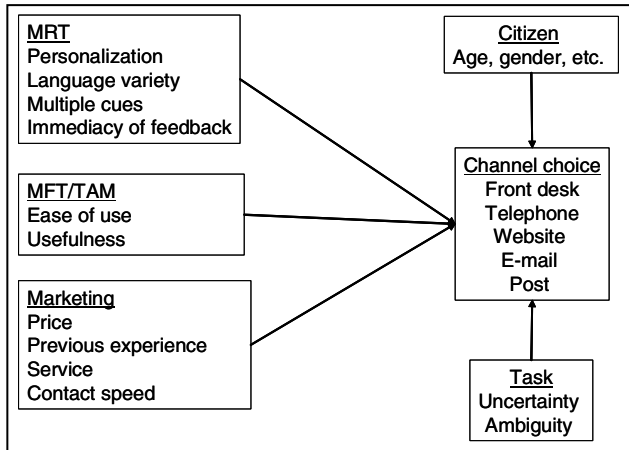

Fig. 1. Proposed research model

varies according to the experiences someone has with the use of the channel. CET also adds the previous experiences as a characteristic of service channels. Basically as CET argues medium richness is not static but dependent on the context and the user. As such we combine MRT with the media feature theoretical perspective and insights from marketing to determine empirically to what extent CET holds in a government setting. The proposed research model therefore looks as shown in figure 1.

Since no extensive research exists that investigates the perceived characteristics of the available service channels and relates these perceptions to channel choice and channel usage, we decided to explore these channel perceptions in more detail. The basic question asked in this paper is, how do citizens perceive the different service channels and do these perceptions affect their channel choices? This main question is further operationalized in four research questions:

1. What channels do the citizens use in their contact with governmental agencies?
2. How do citizens perceive the different channels in terms of their richness and other characteristics?
3. To what extent do those channel perceptions vary along the personal characteristics of the citizens?
4. Do the channel perceptions affect the channel choice and usage of the citizens?

3   Method

To answer the research questions described above, we conducted a survey among Dutch citizens. The survey took place in a large Dutch municipality (155.000 inhabitants). In this municipality various governmental agencies collaborate in providing citizens one-stop government service around social security issues. Citizens can contact government in this region via the front desk, telephone and website. We decided to survey the citizens via these three main channels. This method ensured that we could question citizens that had made an actual channel choice to contact government. As a result we directly link channel perceptions to channel choice. In terms of size, population and services, the municipality can be characterized as an average Dutch municipality.

We mostly used existing measures of (perceived) channel characteristics. Each perception was measured using one question. Regarding these characteristics, the respondents were asked to indicate which channel suited the characteristic best. Table 1 gives an overview of the channel characteristics and the corresponding survey questions.

Besides the channel characteristics, we asked respondents which channel they use most often for their contacts with governmental agencies and which channel they prefer for their government contacts. We also asked citizens which channels they had used during the past 12 months. For channel choice we used the actual channel via which the citizen had filled in the questionnaire as a measure and we asked the citizens why they had chosen that channel.

During the weeks 48-51 of 2007 and 1-4 of 2008, we surveyed citizens that contacted government via the three channels. Citizens who visited the front desk were asked to fill in the questionnaire behind a computer. Visitors of the website were redirected to the electronic questionnaire. Citizens that contacted government via the phone were surveyed via the phone. A total number of 233 respondents filled in our survey; 100 citizens via the front desk, 100 via the telephone and 33 via the website.

The number of respondents via the website is lower than anticipated. Nevertheless, the number of respondents is sufficient for statistical analysis. The characteristics of the respondents were compared to those of the population and the sample reflected the characteristics of the population sufficiently, so the data were not weighted.

Table 1. Operationalization of channel characteristics

Concept	Operationalization
Price	This channel is for me the cheapest.
Ease of use	This channel is the easiest to use.
Usefulness	This channel is the most useful.
Experiences	With channel I have the best experiences.
Service	This channel provides me the best service.
Contact speed	Via this channel I am in contact with the government the quickest.
Immediacy of feedback	This channel provides immediate feedback.
Multiple cues	This channel allows information to be transmitted in multiple ways.
Language variety	This channel enables to use varied language
Personalization	This channel allows me to tailor messages to my own circumstances

4   Results

Figure 2 shows that the customers tend to use and prefer the front desk and the telephone. Actually given the indicated preferences usage of the front desk would be even higher. In terms of the digital channels, i.e., the website and e-mail, our results show slightly higher preference than usage. Overall the traditional channels are still favored. To determine if certain groups of customers favor a channel compared to other groups, we analyzed channel usage based on social demographics such as age and gender.
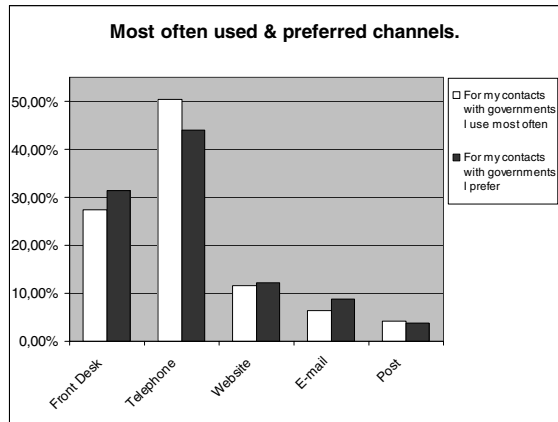

Fig. 2. Most often used and preferred channels

Based on results from previous research it is to be expected that younger and higher educated citizens tend to use the digital channels, i.e. website and email. Nevertheless, our results show that this is not the case. The explanation for this result may lie in the relatively low level of education for the young respondents. The results show that channel usage only varies significantly based on age. Respondent characteristics such as gender and education do not seem to affect channel usage. Moreover, we see a very strong correlation between the channel used last and the channel used most often. This strong correlation applies most to

Table 2. Channel usage, personal characteristics and channels used last (channel choice)

| | CHANNEL USED MOST OFTEN | | | | |
	Front desk	Telephone	Website	E-mail	Post
Demographic characteristics (age, gender, education)					
15-25	72.7	18.2	0	9.1	0
25-45	29.7	46.2	16.5	6.6	1.1
45-65	23.7	45.8	11.9	6.8	11.9
> 65	0	100.0	0	0	0
Male	32.4	36.8	13.2	11.8	5.9
Female	27.2	52.4	12.6	3.9	3.9
Low	29.2	52.8	9.7	4.2	4.2
Medium	37.3	40.7	10.2	8.5	3.4
High	15.0	42.5	25.0	10.0	7.5
Channel used last					
Front Desk	43.6	36.2	8.5	7.4	4.3
Telephone	16.9	73.0	1.1	3.4	5.6
Website	9.1	30.3	48.5	12.1	0
TOTAL	27.3	50.5	11.6	6.5	4.2

Age: χ^2 (12, N = 167) = 28,238, p = .005, Gender: χ^2 (4, N = 171) = 6,536, p = .163
Education: χ^2 (8, N = 171) = 12,959, p = .113, Response method: χ^2 (8, N = 216) = 85,087, p < .000

customers who last used the phone and who indicate they use the phone most often. Similar results were found when determining the relationship with preferred channel (instead of channel used most often).

4.1 Channel Perceptions

Figure 3 shows an overview of the channel perceptions for each of the channels. The results show very different perceptions for the various channels. For instance the front desk seems to score highly on factors such as service, previous experience, multiple cues and personalisation. For the telephone contact of speed, immediacy of
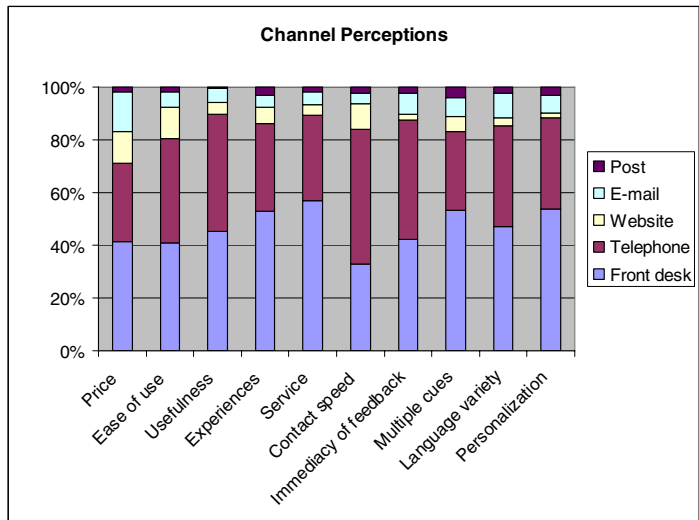

Fig. 3. Channel perceptions of the different channels

feedback and usefulness seem to have the upper hand in case of the electronic channels (website and email) price and ease of use are mentioned most often.

Further, we conducted a Homogeneity Analysis (HOMALS) to analyze whether the various chan-nel characteristics are per-ceived as a homogenous set of characteristics or not. HOMALS is comparable to a factor analysis, but is suited for categorical data. Our analysis shows there are two factors or dimen-sions in the channel charac-teristics. Figure 4 shows a graphical representation of the different characteris-tics plotted on the dimen-sion. Interestingly, the MRT factors are mostly in the lower half of the figure, whereas the TAM, CET and MARKETING
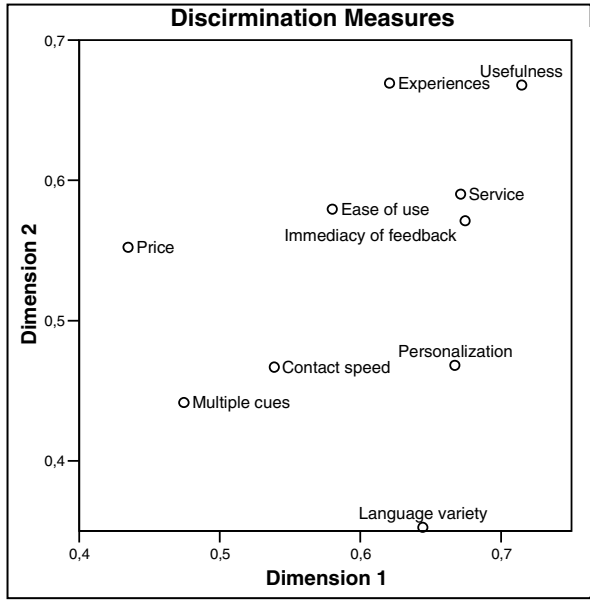

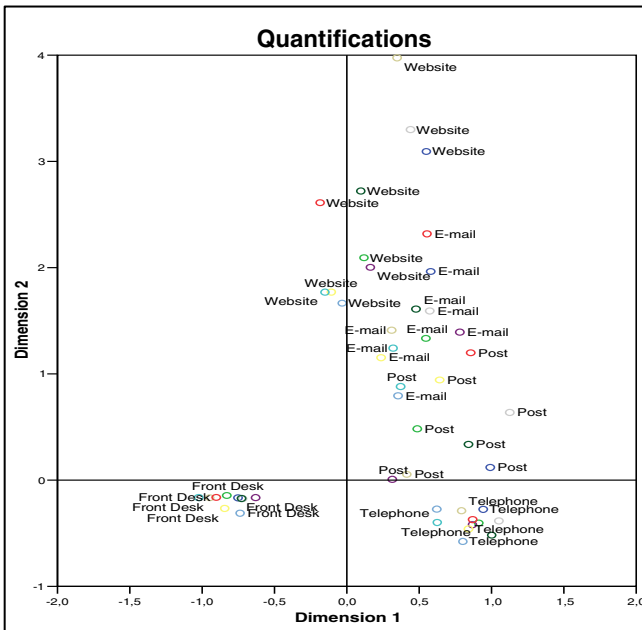**Fig. 4.** Two dimensional plot of channel characteristics

Fig. 5. Two dimensional plot of channels

factors can be found in the upper half. This is an indication that the characteristics that are theoretically different, also show empirical differences.

Next step in the HOMALS is to plot the different channels in the two dimensional space. This is shown in figure 5. This is an indication of how the different channels are related to the different channel characteristics. As the figure shows, the different channels all occupy their own distinctive area in the space. Front desk and

telephone are mostly associated with the MRT factors, whereas website and e-mail are strongly related to TAM/CET factors.

Next, we analyzed how the different demographic characteristics affect channel perceptions. We find significant differences on channel perceptions for the various channels given the customers' demographics and the channel last used. For instance, we find that women perceive the telephone to have strong ease of use whereas men tend to perceive the front desk and web site strong on this characteristic. In terms of a classic MRT factor we find differences for the perception of multiple cues. More specifically lower educated citizens associate the front desk with multiple cues whereas higher educated citizens associate the telephone and website with multiple cues. These differences are a first indication that indeed the assumption of the MRT – i.e. that the characteristics of media are fixed – can be falsified. Most interesting finding here is that channel choice, in terms of the channel used last strongly affects channel perceptions, we found significant differences on each of the channel characteristics (see the appendix of an overview of the test results). This means that users of the front desk associate all channel characteristics most strongly with the front desk, people phoning government associate all characteristics with the telephone and citizens who visited the website associate all characteristics with the website. This may be a strong indication for the channel expansion effect; (perceived) richness increases as experience with channel usage increases. Moreover this result is another indication of the notions that channel perceptions are strongly variable alongside the personal circumstances of the citizen. Finally, we analyzed, using chi-squares, how channel perceptions vary along the channels citizens use most often and the channel they prefer. The channel used last (front desk, telephone and website), was used as a layer. This allows us to assess whether channel choice and channel usage are related and are influences through the channel perceptions. The table below shows the p-values of the chi-square tests.

A number of findings are remarkably interesting. First of all, the results show that citizens do not only relate channel perceptions to the most often used and preferred channel, but these differences are also reflected in their channel choices. To give an

Table 3. Channel choice, use and perceived channel characteristics

CHANNEL CHOICE, USE & PERCEPTIONS					
CHANNEL USED MOST OFTEN			PREFERRED CHANNEL		
Front desk	Telephone	Website	Front Desk	Telephone	Website
Price	0.000	0.516	0.065	0.000	0.022	0.037
Ease of use	0.000	0.298	0.000	0.000	0.003	0.000
Usefulness	0.003	0.052	0.056	0.000	0.004	0.024
Experiences	0.000	0.018	0.001	0.000	0.448	0.005
Service	0.000	0.020	0.225	0.000	0.226	0.185
Contact speed	0.000	0.000	0.000	0.000	0.002	0.000
Immediacy of feedback	0.000	0.018	0.094	0.000	0.042	0.009
Multiple cues	0.000	0.004	0.741	0.000	0.022	0.294
Language variety	0.000	0.000	0.636	0.000	0.000	0.208
Personalization	0.001	1.03	0.051	0.000	0.004	0.007

example, that also helps in the interpretation of the table; regarding contact speed, citizens that chose the front desk as their last channel see the front desk not only as the channel offering the best contact speed, it is also their most often used channel. Website visitors also see the website as having the best contact speed and they regard the website as their most used channel. Second, the relationship between channel choice, usage and perceptions is stronger for front-desk visitors than for citizens seeking telephonic contact and especially website visitors. This may mean a couple of things, first of all, front desk (and telephone) are the most used channels, through the extensive usage of these channels citizens using these channels may have more favorable perceptions towards these channels. Another interpretation is that website visitors, who generally use more channels, have a more balanced perception of the channel characteristics; they may associate some characteristics with one channel and other characteristics with another. Finally, it is possible that the number of respondents via the website was to low for many of the effects to become significant.

5   Conclusions

The first research question formulated was; "what channels do the citizens use in their contact with governmental agencies?", we found, in accordance with previous studies [26, 27] that citizens still rely strongly on the traditional service channels. The telephone is the most used channel, it also is the preferred channel. The electronic channels are used to a lesser extend, but more citizens indicate their preference for this channel, this is an important indication for the potential growth of the use of this channel in the future.

The second research question regarded the perceptions of the channel characteristics. In general, most characteristics are associated with the traditional service channels, however, the variance in perceptions is large. The front desk scores highly on factors such as service, previous experience, multiple cues and personalisation. For the telephone contact of speed, immediacy of feedback and usefulness seem to have the upper hand. The electronic channels are associated with price and ease of use. The homogeneity analysis showed that there are different dimensions in the channel characteristics and these dimensions relate to the different channels. The traditional channels score higher on the MRT factors, whereas the electronic channels score higher on the TAM factors.

To what extent do those channel perceptions vary along the personal characteristics of the citizens? It is difficult to answer this third research question, the channel perceptions vary strongly along the personal characteristics, but there is no onedimensional relationship. Whereas channel choice and usage have been linked extensively to personal characteristics, finding mostly strong relationships on variables such as age and education, we cannot draw straightforward conclusions regarding the sociodemographic characteristics. However, from the three characteristics, education seems to cause most differences. Mostly in the direction of the higher educated having favourable perceptions of the electronic channels.

The final research question regarded the channel perceptions and their relation with channel choice and usage. Our results made clear that there is a strong relationship between the channel chosen last and the channel perceptions, as well as between most

used and preferred channel and channel perceptions. People tend to choose the channels whose characteristics they perceived most positive. However, this relationship between channel choice, usage and perceptions is stronger for front-desk visitors than for citizens seeking telephonic contact and especially website visitors. Our study is the first to assess the perceptions of multiple characteristics of service channels by (different groups of) citizens. As our study makes clear; channel characteristics are far from fixed, as suggested by various theories and multi-channel management models. Channel characteristics are perceptions and those perceptions determine whether citizens will choose this channel or not. So, it may be very well possible that citizens perceive a channel to posses a characteristic, whereas the channel wouldn't have this attribute according to more objective criteria. Moreover, channel perceptions vary strongly with the personal characteristics of the citizens, as well as actual channel choice, channel usage and channel preferences. Both practitioners in the field of service channels, as well as multi-channel management theorists should take into account these differences when building or enhancing their strategies, models or theories.

Future research should aim at connecting the perceptions of channel characteristics with for example (perceived) task or service characteristics. Through statistical modelling techniques, such as structural equation modelling a deeper understanding can be developed of the relationships between channels, services and the citizens using those channels to obtain services.

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Appendix

	CHANNEL PERCEPTIONS
	Age
Price	χ^2 (12, N = 166) = 30.852, p = .002 The elderly see the phone as cheap, the younger the front desk
	Gender
Ease of use	χ^2 (4, N = 171) = 17.050, p = .002 Females see the phone as easy, men the front desk and websites
Multiple cues	χ^2 (4, N = 169) = 9.564, p = .048 Vrouwen meer telefoon, mannen meer balie
	Education
Usefulness	χ^2 (8, N = 169) = 19.566, p = .012 Higher educated see e-mail as more useful
Experiences	χ^2 (8, N = 166) = 17.890, p = .022 Higher educated have better experiences with websites
Service	χ^2 (8, N = 163) = 17.376, p = .026 Higher educated see telephone and website as giving more service
Contact speed	χ^2 (8, N = 167) = 20.286, p = .009 Higher educated see websites as better on contact speed
Multiple cues	χ^2 (8, N = 169) = 19.167, p = .014 Lower educated see front desk as giving more cues, higher educated see phone and websites as having more cues.
	Channel last used
Price	χ^2 (8, N = 212) = 104.047, p < .000
Ease of use	χ^2 (8, N = 215) = 79.117, p < .000
Usefulness	χ^2 (8, N = 213) = 54.348, p < .000
Experiences	χ^2 (8, N = 208) = 82.516, p < .000
Service	χ^2 (8, N = 207) = 58.849, p < .000
Contact speed	χ^2 (8, N = 211) = 39.942, p < .000
Immediacy of feedback	χ^2 (8, N = 215) = 61.820, p < .000
Multiple cues	χ^2 (8, N = 212) = 46.769, p < .000
Language variety	χ^2 (8, N = 206) = 53.307, p < .000
Personalization	χ^2 (8, N = 215) = 51.447, p < .000

Regarding channel used last, all effects are in expected direction, people associate the channel they used last with the channel characteristics. The table shows the test results of the demographic characteristics and channel choice related to the perceived channel characteristics. Only significant relationships (T < 0.05) are shown.