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Toute désignation de personne, de statut ou de fonction s'entend indifféremment au féminin et au masculin.

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Résumé

Les réformes communales visant à un renforcement de la collaboration entre communes, voire à un processus de fusion sont majoritairement initiées par les autorités locales, alors que les citoyens ne sont consultés qu'ultérieurement lorsque le projet arrive à son terme, généralement dans le cadre d'une votation populaire. Le risque d'un rejet du projet devant le peuple est plus élevé si les craintes et les attentes des citoyens n'ont pas été prises en compte dans la formulation du projet. Se basant sur un sondage préliminaire effectué auprès de la population de deux communes souhaitant engager un processus de rapprochement, cette recherche tente de mesurer empiriquement l'impact des attentes et des craintes des citoyens par rapport à une éventuelle fusion sur leur disposition à accepter diverses formes de collaboration intercommunale. Les résultats montrent que la préoccupation identitaire du citoyen ainsi que la crainte de voir les coûts de fonctionnement augmenter ont un fort impact négatif sur la disposition à accepter des formes de collaboration très avancées, voire de fusionner. En revanche, les attentes en matière de développement économique favorisent l'acceptation d'un renforcement de la collaboration.

Abstract

Populations are usually not asked their opinion when authorities initiate an amalgamation process between neighbouring municipalities. The risk of failure increases since actual fears and expectations cannot be addressed properly. By means of econometric techniques, we measure how citizens' expectations and fears regarding amalgamation surveyed at an early stage of the process impact on their readiness to accept a closer collaboration. We find that the expectation of reinforcing economic development has the greatest impact on the probability of favouring amalgamation. The fears of losing the identity of one's own village and that of cost increase have the most negative impact.

1. Introduction

1.1 The importance of the population's feelings within an amalgamation process

Studies dealing with the amalgamation of municipalities and that also analyse the opinions and attitude of the public concerned regarding the amalgamation process and its results are rare. This may be due to the fact that the theoretical aspect, and in particular as far as fiscal federalism is concerned, has a normative character and thus does not touch on the democratic aspects inherent to this type of institutional reform. From a practical point of view, this is probably due to the absence of systematic preliminary surveys of the population's opinion when authorities consider initiating such an amalgamation.

Disregarding the aspect of public opinion is to run the risk that the process could fail. Indeed, as Irvin and Stansbury (2004, 55) state, "citizen participation in government decision-making produces many important advantages", one of which is that "a policy that is well grounded in citizen preferences might be implemented in a smoother [...] fashion because the public is more co-operative when the policy is implemented" It is thus worthwhile to take the citizens' preferences into account from the moment that the strategic options for a closer co-operation between municipalities must be decided upon. In particular, the individuals must state whether very close co-operation going as far as an amalgamation between municipalities is a feasible option, as compared to a specific and limited form of co-operation (for certain services), a systematic and widespread form of co-operation (namely for clusters of services) or no co-operation at all. If, during the strategic phase, it becomes evident from the preferences that it will be impossible to consider anything more than just collaboration, studying the option of amalgamation in more detail and from an operational perspective would be a waste of time and money. That is particularly obvious in the case of the Swiss municipalities, where a decision to amalgamate is ultimately subjected to a ballot referendum and is thus an issue that will be decided upon by the population.

The aim of this paper is to study the citizens' opinions even before a process of closer co-operation that can go as far an amalgamation starts. It also aims at identifying a possible convergence between the theoretical arguments developed in support of such a process and the individuals' expectations (economy of scale, for example). The same applies to a possible congruence between theoretical arguments against such a process

and the people's fears (*e.g.* a loss of wellbeing if the design of municipal services were not to match local preferences as well as before).

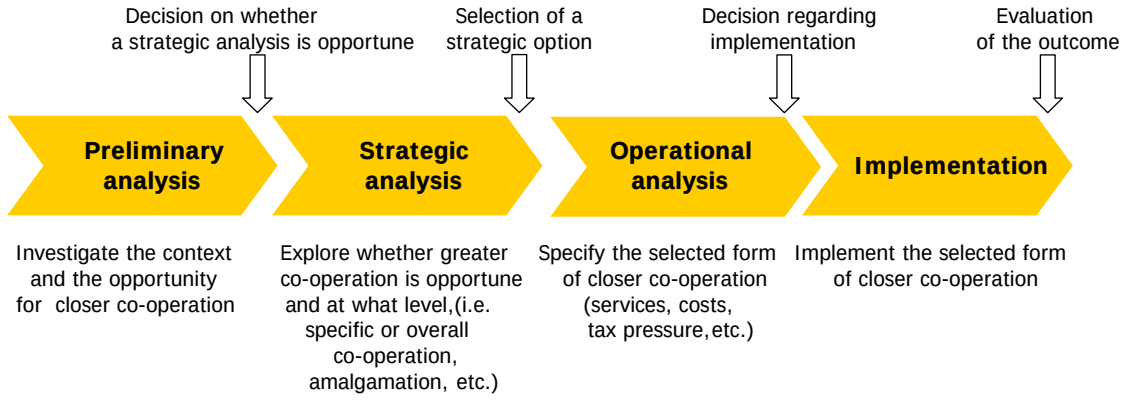
Empirically, the article takes advantage of a study about the way in which two specific Swiss municipalities could co-operate more closely. We investigate the factors that influence the citizens' opinion regarding various forms of co-operation and the fears or expectations that have the strongest impact.

Firstly, we expose the arguments in favour of or against closer co-operation or an amalgamation between municipalities: those arguments that are the most frequently quoted in literature on this issue. We then specify the econometric model and the data we used. Finally, the results of the estimated models are summarised, followed by some concluding comments and possible directions for future research.

1.2 The 4 stages of the typical amalgamation process

The process aiming at closer co-operation and possibly an amalgamation usually takes place in several steps. Soguel & Léchot (2003) suggest distinguishing 4 stages in the process: the preliminary analysis, the strategic analysis, the operational analysis and the implementation. Figure 1 sketches out these stages and mentions the aim of each stage. It also stresses that at each step, and whatever the result of the analysis, a decision must be taken before the next stage can begin. This approach guarantees that the next stage is correctly and efficiently focused. As for the first stage – the preliminary analysis –, the aim is to investigate the context and the opportunity for the municipalities concerned to co-operate more closely. This analysis is typically carried out using a survey of the population. On the basis of the results of the survey, a decision is taken on continuing the process by means of a strategic analysis. The goal is then to find out which level of co-operation is the most suitable: no co-operation at all, restricted and specific co-operation (*i.e.* for a few municipal services), systematic and widespread co-operation (namely for clusters of services) or an amalgamation. If this latter solution is chosen as the best strategic option, it is then time to proceed to the operational analysis, whose goal is to design the virtual municipality after the amalgamation has taken place, and to gather all the necessary information in order for the politicians and the population to eventually decide whether the new municipality can become reality (quality and quantity of all the municipal services, delivery process and costs, tax pressure, etc.).

Figure 1
The 4 typical stages of a process aiming at closer municipal co-operation



Source: Soguel & Léchot (2003).

2. Hypotheses and related references

Literature on the subject does not offer us a theoretically formalised model that would at the same time include the economic, political and social aspects related to close co-operation and possibly amalgamation between jurisdictions. In his synthesis on co-operation between municipalities in Switzerland and to explain this lack, Steiner (2002) mainly indicates that the few disciplines of research in this field only deal with individual aspects, and believes that the disciplines should co-operate since the issues at stake are numerous. However, the debate surrounding the subject of bringing together communities is not new and is gaining ground. It is explained by the current financial difficulties within the public sector. The theory of fiscal federalism brings us several criteria that are of assistance when discussing the issue (King 1996) and that foster hypotheses about the factors that influence the attitude of people regarding a rapprochement between municipalities or amalgamation. Some of the hypotheses mentioned below arise from the literature mentioned, although not all.

2.1 Expectations and fears

People may naturally harbour expectations or fears regarding the amalgamation of their municipalities. In fact, a kind of symmetry exists between expectations and fears. For example, in the eyes of the population an amalgamation can be seen as an opportunity to reduce government-related costs but also as a fear that these same costs could run out of control. Of course, we expect that expectations would increase the likelihood that

the individuals would be in favour of the amalgamation, whereas fears would decrease this likelihood. Beyond discovering evidence of the correlation between the expectations or the fears and the attitude towards the amalgamation, it would also be extremely interesting to compare the marginal effect of each kind of expectations or fears on the probability that the individual develops a positive or, on the contrary, a negative attitude towards amalgamation. This would help us to better understand what the most prominent issues are. It is worthy of note that these issues may not be the same among the entire population of the municipalities concerned. We shall develop the expectations and fears as expressed by those who were actually included in the questionnaire.

COSTS AND TAXES. When discussing the issue of amalgamation, the argument of possible economies of scale always emerges. According to Dafflon (2001), the Swiss municipalities are today too small to carry out the tasks devolved to them. The rationale for that consideration is that if not for all municipal services, an optimal size exists – depending on the number of inhabitants - for at least each individual service. This permits the municipality to benefit from economies of scale (King 1996). In fact, it would appear that this size has not yet been attained in many municipalities. Such a situation would thus advocate an amalgamation between neighbouring municipalities. Of course, this solution may not be efficient in the case of services for which diseconomies of scale would emerge, (Soguel 2001) triggering a cost increase.

An amalgamation internalises the spillover effects in the case of public services whose area of consumption is larger than the initial municipal borders (Dafflon, 1999). The citizens of the municipality that is the source of the spillovers could thus favour a functional or institutional integration of the municipalities concerned in order for the beneficiaries of the externalities pay for them. This outcome must be combined with the above-mentioned one in order to highlight the net effect on costs. In any case, and closely connected with the impact on costs, taxpayers may be sensitive to the consequence on the tax pressure they face. The tax issue is extremely prominent when there is a significant gap between either the municipal tax bases or the tax rates. In that case, the municipal tax sovereignty often becomes an obstacle to the process (Ladner 2001).

It seems obvious that the inhabitants of the wealthiest municipality will not appreciate balancing the tax pressure between municipalities if this led to a surge in the rate they pay. This partly explains the failure to

amalgamate the Swiss municipalities of Rapperswil and Jona after the negative outcome of the ballot referendum. Leuenberger (1999) shows that among the voters of the wealthiest municipality (i.e. the one with the lowest tax rates) who rejected the proposal, the fear of tax increase following the amalgamation was the main reason why they said no for (22% of those voting against the amalgamation). The earlier test by Filter & Kenny (1988) using the results of fifty-two city-county consolidation referenda between 1949 and 1976 in the United States led to similar conclusions: the wider the gap in median income between jurisdictions, the larger the proportion of voters who oppose the project. Brink (2004), in her study about the break-up of Swedish municipalities, finds support for the hypothesis that voters in those parts of the municipality that are wealthier than others within it view secession more favourably.

SERVICES. An amalgamation solves another problem in the case of spillovers: it allows all users to influence the design of services through elections and/or a ballot referendum (if this latter possibility exists by law) and more generally through the whole political process. Thus, the circle of the decision-makers is enlarged to include the members of the municipality who previously benefited from the spillover effects without being able to express their preferences on a political level.

Neighbourhood relations between municipalities require co-ordination. The municipalities need to consult each other in numerous areas: school, road network, land development plan, drinking water distribution network, drainage network, etc. These activities incur costs. They consume time and energy. Collaboration or amalgamation enables single municipal authorities to take decisions, and consequently co-ordination costs decrease or even disappear.[1]

Association and above all amalgamation require the largest possible homogeneity as far as the preferences of the municipalities in question is concerned. This means that the tastes and preferences of the respective populations must be as close as possible. By their nature, association and amalgamation mean that standard services are provided, i.e. services that are no longer tailored to the varying wishes. The standardisation that takes place as a result of collaboration or amalgamation does, however, give rise to dissatisfaction (and thus fear for the quality of service) if the preferences of the municipalities that are to amalgamate or collaborate are different (heterogeneous). For example, inhabitants of municipality *A* may prefer their refuse to be collected 3 times a week, whereas those of municipality *B* prefer one weekly round alone. This possible source of

dissatisfaction is precisely the type of argument that is frequently used in defence of the budgetary and fiscal autonomy and sovereignty of municipalities. A considerable amount of literature has developed this notion under the name of the *decentralisation theorem* (Oates 1972).

Closer co-operation would also allow the concerned municipalities to provide services that they cannot afford on an individual basis. Here, let us mention services that require a large infrastructure, indivisible by nature and not accessible to individual municipalities due to excessive fixed costs. Although some citizens see this as an opportunity to develop municipal infrastructures and thus to enhance the services provided, others tend to fear tax increases in order to finance such an infrastructure. .

DEVELOPMENT. In order to attract firms or citizens to their territory, many municipalities allocate resources for economic promotion. Pooling these resources by means of collaboration among several municipalities makes it possible to give more weight to the promotional efforts on the one hand, and to co-ordinate the objectives of economic development on the other. This approach also makes it possible to reinforce the new entity's regional leadership position. For the citizen, this can take the form of more employment being available in the region.

POWER. Another angle of closer co-operation and especially an amalgamation is that it gives the municipalities concerned greater negotiating and bargaining power. This is a success factor in relationships, both with other municipalities or with higher echelons (regional, provincial or central government). As a result, laws and rules that are passed may better satisfy the interests of the co-operating municipalities and reflect citizens' preferences more faithfully.[2]

POLITICS. On a political level, the amalgamation option would lead to the most notable change, since the amalgamated municipality would consist of a single executive a legislative authority. This would provide a solution to the difficulties of finding individuals prepared to commit themselves to politics that is encountered in the small municipalities. This also, however, implies a need to reconsider the current authorities and fears of putting a less efficient team in charge (Poel 2000). In any case, and even in the case of larger municipalities, an amalgamation could boost political life since the number of those potentially interested in entering the political

arena would be increased. Competition for political power would thus be fiercer and this in turn would improve the quality of political decisions.[3]

CONTROL. Naturally, some fears that the politicians in office could lose control due to the amalgamation could arise. This fear could be especially present among those who favour a policy of proximity. Mathematically, the weight of each individual voter in decision-making decreases as the number of voters increases. The larger the average size of the municipalities becomes, the stronger this argument hold true. Moreover, this fear is undoubtedly more prevalent among the citizens of the smaller municipality involved in the process.

IDENTITY. Last but not least, there is the fear that the municipal identity will be lost because of the amalgamation. A proposal to amalgamate one's municipality with a neighbouring one often triggers fears about the disappearance of the municipality as a symbolic entity. Some citizens may fear that their feeling of belonging to a social entity would vanish. This feeling is heightened by means of various signs: the municipality's name, its flag, its coat of arms, its authorities, etc. All these signs may disappear or be altered if an amalgamation takes place.

2.2 Individual characteristics

The individual situation of each citizen may interact with the above-mentioned expectations and fears. If such interaction takes place, it will either decrease or increase the likelihood for that individual to favour or, on the contrary, to reject the proposal for a rapprochement/amalgamation between his municipality and the neighbouring one. A large array of factors that condition the individual in question may influence his attitude toward the process. Let us mention his age, gender, socio-economic category, whether he has children, if he is professionally active in the municipality, if he has been living there for some time or if this is his place or origin, if he feels a sense of belonging to the municipality, if he favours co-operation with municipalities other than the one concerned by the process and the municipality in which he lives (only for the model that includes both municipalities). Table 1 summarises some individual characteristics that were eventually included in the questionnaire. It also indicates the expected sign of the correlation between the given characteristics and the attitude towards the rapprochement/amalgamation process.

Table 1
Summary of the characteristics that may influence an individual's attitude towards closer co-operation or amalgamation

Variable	Expected sign
Expectations regarding closer co-operation	Positive
Fears regarding a closer co-operation	Negative
Satisfaction with regard to existing co-operation between the municipalities concerned	Positive
Readiness for closer co-operation with other municipalities than the ones directly involved in the process	Positive
Feeling of belonging to the municipality rather than to any other tier (region, canton or country), feeling of belonging to the municipality	Negative
Professional or private activities mostly carried out in the municipality rather than in any other geographic area	Negative
Resident in the municipality for more than 5 years	Negative
Municipality as the individual's place of origin	Negative
Respondent's gender	?
Age	?
Marital status (single, married, separated, divorced, widowed)	?
Parent of one or more children	?

3 Research design

3.1 The model

In order to test the above-mentioned hypotheses, we need to create a model that explains which type of co-operation is favoured by citizens, *i.e.* to what extent citizens would accept closer co-operation depending on the proposed degree thereof. The degree of co-operation can vary, and typically ranges between *(1)* no co-operation at all, *(2)* restricted and specific co-operation, *(3)* systematic and widespread co-operation and *(4)* amalgamation. These 4 scenarios were the types of co-operation that citizens were proposed in our survey. As a result, the degree of co-operation expressed in the survey is based on a continuous latent variable whose value is unknown but for which 4 discrete and categorised values are known thanks to the survey. For the estimation, we assume that each citizen chooses the discrete value that is the closest to the degree of co-operation he would favour.

More formally, the explanatory model can be expressed as follows:

$$Y_i^* = \beta' x_i + u_i \text{ , (i=1, 2, …, n),}$$

where Y^* represents the latent variable corresponding to the degree of co-operation desired by the individual *i*. The degree is explained by the set of explanatory variables x_i included in the model and u_i the associated error term. As already mentioned, Y^* is not directly measured but is approximated by the variable Y, which can take 4 discrete values depending upon the value taken by Y^*. Parameters β are estimated by maximizing the likelihood function based on a standard normal distribution.[4]

3.2. The data

Data was collected using the opportunity of a project to reinforce co-operation between two Swiss municipalities. Both of these are suburban villages that form part of the conurbation of the small town of Neuchâtel (Newcastle). They are similar in size: Corcelles-Cormondrèche has 4,074 inhabitants, whereas Peseux has 5,594.[5] Not only are the two villages similar thanks to their geographical position and the size of their populations, however, but they also experienced a similar history and are linked by means of a connected built landscape. They also face the same economic challenges and the same institutional environment on a Cantonal level. Furthermore, they already co-operated in several specific areas such as fire protection, social services, police, secondary schools, road maintenance, refuse collection and water sanitation.

The survey was carried out during the strategic analysis. The survey methods were chosen in order to collect a large number of opinions. First, the number of questions was voluntarily restricted to the essentials, in order for the entire survey to take up on A3 page printed on both sides (i.e. four A4 pages when folded). The survey was then carried out among all individuals on the electoral register, with the replies being anonymous. Since the survey was handled by mail, a draw was organized to award two persons among those who took the trouble to reply[6]. This made it possible to achieve a global return rate of 37.7%, i.e. considerable higher than the usual 10 – 15% achieved via this method[7]. We should note that the survey was not primarily drawn up to assess the explanatory elements of the voters' attitude regarding the rapprochement of the two municipalities, but was mainly created in order to characterise this attitude. This, moreover, was how the survey was presented to the respondents. It is therefore possible that some explanatory variables, although relevant, did not permit a dedicated question. Such an omission may thus either bias the estimated model or explain why the explanatory power of the model is somewhat low (Pseudo-R^2).

In order to prevent a possible bias due to auto-selection of the observations, and since it was by no means possible to guarantee that the sample obtained by this method was representative, we proceeded to a chi-square test in order to compare the structures of the population and of the sample. This test was carried out on the three variables for which statistics are available in the two communes (sex, age, and origin of the respondents), to which was added the marital status in the municipality of Peseux. As shown in table 2, in 5 cases out of 7, the hypothesis that the structure of the sample corresponds to that of the population could not be rejected at the threshold of 95% (the exceptions being gender in Corcelles-Cormondrèche and origin in Peseux). We conclude from this that the sample is fairly representative of the population, and even highly representative regarding the respondents' age. On the contrary, however, we are unable to exclude the possibility that the sample consist, in a higher proportion than that of the electorate, of persons who regularly take part in voting.

Table 2
Comparison of the composition of the sample and of the population, by municipality[a]

Variable	Corcelles-Cormondrèche			Peseux		
	Computed Chi-squared	Number of categories	p-value	Computed Chi-squared	Number of categories	p-value
Gender	5.122	2	.024	0.0006	2	.981
Age category	7.296	5	.121	2.954	5	.566
Origin in the village	1.684	2	.194	4.239	2	.040
Marital status [b]	na	na	na	6.336	4	.096

[a] The data on the population includes all the inhabitants of the village. This includes foreigners without the right to vote. The survey did not, however, include this category of the population since the individuals concerned were not entitled to vote.

[b] We do not have data available regarding marital status in the municipality of Corcelles-Cormondrèche.

4 Results

4.1 Stylised facts

Table 3 summarises the results of the survey for the question pertaining to the kind of co-operation the respondents favour. The respondents in the two municipalities do not support the various degrees of co-operation in the same proportions. Those of Corcelles-Cormondrèche are somewhat more in favour of restricted, specific co-operation, i.e. almost a status quo (39%), whereas those of Peseux would prefer tight, institutional co-operation in the form of an amalgamation. The proportion in favour of amalgamation is 45% compared to 25% in Corcelles-Cormondrèche. However, the fact that a quarter of the respondents spontaneously mentioned

the amalgamation as the solution they would favour is surprising, since there was no prior debate or specific information, i.e. the uncertainties were still high.

Table 3
Citizens of Peseux favour amalgamation while those of Corcelles-Cormondrèche prefer a more specific, restricted degree of co-operation

	Corcelles-Cormondrèche		Peseux	
	Number	Percentage	Number	Percentage
No co-operation at all	35	3	27	2
Restricted and specific co-operation (specific kinds of services)	446	39	328	25
Systematic and widespread co-operation (clusters of services)	378	33	372	28
Amalgamation (single political and institutional body)	292	25	603	45
Total	1,151	100	1,340	100

Naturally, uncertainties generate expectations and fears: these elements are reviewed in table 4. Respondents were asked to quote, from a closed list, their three main expectations and three main fears regarding the process. The table shows that the results are similar when comparing the respondents' opinions in the two municipalities. In fact, the most frequently cited expectation was the hope that costs could be reduced. Almost 90% of the respondents mentioned this item (86% in Corcelles-Cormondrèche and 89% in Peseux). An improvement in municipal services and in development is also anticipated by a majority (55%, 58% and 52%, 56% respectively). Although not mentioned by a majority, a large proportion of respondents indicated that they expected the negotiating and bargaining power to be strengthened (46% and 42%). Other expectations are quoted far less frequently.

The most frequently expressed fear is related to an escalation in costs and an increase of tax pressure. The point is referred to by more than half of the sample (57% in Corcelles-Cormondrèche and 55% in Peseux). No other fear is cited by a majority of respondents. It should be noted, however, that 49% of the respondents living in Corcelles-Cormondrèche mentioned that they feared losing their identity (and 40% in Peseux). At the same time, it is hardly surprising that almost nobody expects that closer co-operation or an amalgamation would reinforce the municipal identity (10% in Corcelles-Cormondrèche and 12% in Peseux). Other fears are expressed by a minority (control, politics, development and power). In addition, we note a greater degree of heterogeneity among the fears expressed than among the expectations.

We have reported the sum of the percentages in the table. Since every respondent was asked to quote three expectations and three fears, the reader could anticipate that the figure would be 300%. However the total is lower, which indicates that some respondents mentioned less than three items. Nevertheless, this behaviour also reveals the opinion of both populations with regard to the process of amalgamation. In Corcelles-Cormondrèche, the total for expectations is lower than for Peseux (272 compared to 281) and it is higher for fears (252 compared to 232). As a result, the gap between expectations and fears is smaller in Corcelles-Cormondrèche (20=272–252) than in Peseux (49=281–232). This reveals that the expected net benefit is less important in the former municipality than in the latter.

Table 4
The main expectations and fears towards amalgamation are homogeneous between municipalities

	Frequency (in %) Corcelles-Cormondrèche	Peseux
Expectations		
Costs & taxes	86	89
Services	55	58
Development	52	56
Power	46	42
Politics	12	13
Identity	11	12
Control	10	11
Total	272	281
Fears		
Costs & taxes	57	55
Identity	49	40
Services	37	35
Control	36	31
Politics	34	30
Development	25	27
Power	14	14
Total	252	232

4.2 Empirical results

A model explaining which type of co-operation is preferred by citizens is estimated for each of the two municipalities, namely one for Corcelles-Cormondrèche and one for Peseux. A further overall model is computed, introducing a dummy variable in order to differentiate the municipalities. All models are estimated in two steps. Initially, all the variables that, *a priori,* were expected to have a significant influence on the preferred degree of co-operation are incorporated in the model. A restricted model is then estimated whereby

insignificant coefficients (at the 5% level) in the first step are given a zero value. In order to make sure that these variables could really be excluded, a likelihood-ratio test is carried out (LR test). The null hypothesis according to which the coefficients of the excluded variables would jointly be zero cannot be rejected. This indicates that the restrictions imposed are verified.

Table 5 summarises the results of the restricted model. The variables included of the model can therefore vary according to the municipality. For example, the variables "Age" and "Diffage" (a variable constructed as the square of the age deviation with respect to the median age, in order to allow a non-linear relation) appear in the model explaining the opinion of the respondents living in Peseux and in the overall model. For each model, a first column gives the value of the coefficient together with the value of *z* statistics (in brackets). The value of the parameter cannot be directly interpreted, although its sign indicates the direction of the correlation. For that reason, the second column of the model gives the marginal effect of each individual variable on the probability of favouring an amalgamation. The marginal effect is the change to the value of the explained variable, in our case the probability of favouring the alternative of amalgamation due to a marginal change in one explanatory variable (with all other variables staying unchanged). For dummy variables, the observed effect corresponds to a change from 0 to 1, e.g. expecting development opportunities as a result of amalgamating both municipalities increases the probability of favouring an amalgamation (ceteris paribus) of 17.5% (considering the overall model). In fact, most of the variables are dummies with the exception of "Age" and "Diffage".

Among the variables that reflect neither expectations nor fears, three significantly explain the opinion of respondents in both villages. Firstly, the respondent's gender appears to influence the opinion significantly: more precisely, women tend to prefer a looser form of co-operation than men. The relationship was observed in several other instances[8]. A tentative explanation could be that women are usually more risk-averse and thus favour a situation of *status quo* rather than an institutional change whose outcome is uncertain. Secondly, and as expected, respondents who welcome co-operation with another municipality are also in favour of closer co-operation with the neighbouring municipality. The marginal effect is higher in Peseux and at a level which, in turn, is one of the highest among the variables (.169). This provides evidence that the respondents from Peseux are rather open-minded as far as the amalgamation issue is concerned. A third variable, the one representing parenthood, is also significant at the 5% level, but has an opposite sign in the two municipalities. A tentative

explanation could be that citizens from one village could share the infrastructure of the other more easily in case of closer co-operation, which is perceived negatively by the latter.

The respondents' age also influences the desired intensity of co-operation, although in a non-linear way and in Peseux only. As a result, the joint influence of "Age" and "Diffage"[2] is negative for respondents less than 30 years old, increasing until an age of about 60 and theoretically negative for respondents older than 85 years[9] : the latter are thus more reluctant to accept institutional change[10]. The same finding applies when respondents have been living in Peseux for over five years (the variable is insignificant in the case of Corcelles-Cormondrèche).

Contrary to what we expected, parents living in Corcelles-Cormondrèche and respondents who are professionally active in this village are eager to support closer co-operation, although the marginal effect is weak for the former variable. Interestingly the feeling of belonging to the municipality only has a significant influence for respondents from Corcelles-Cormondrèche, considering the municipalities individually, and is also significant when estimating the overall model. In this latter model, the dummy that discriminates the two sub-samples is significant and negative. Firstly, it means that being an inhabitant of Corcelles-Cormondrèche influences the opinion regarding closer co-operation negatively, and secondly it means that all the variables included in our model are unable to control, to a full extent, for the difference of attitude between both sub-samples.

Let us now turn to expectations and fears, and compare the result of table 4 with those of table 5. In the overall model, all the expectations surveyed except one have a significant and positive influence at the 1% level. It is hardly surprising that the item "identity" is revealed as the exception. The most frequently quoted expectations in table 4 (costs & taxes, services, development and power) appear as possible explanatory variables. Although mentioned by only a minority of respondents, "control" and "politics" increase the support for closer co-operation with a marginal effect equivalent to the one of other variables. In fact, the marginal effect of "control" is the second highest (.158) after that of "development" (.169).

All fears have a significant, negative impact on the respondents' opinion, with almost equivalent marginal effects. This is in line with the statement made about table 4 with the percentages of quotation being on the whole higher than that reported for expectations. Nevertheless, and whatever the item, marginal effects are lower than in the case of expectations.

When considering individual models, "identity" emerges as the only "fear" item that significantly influences the respondents' attitude in both municipalities at the 1% level, while "politics" is also significant but at a lower level. The fear of seeing the identity of the municipality vanish is also that with the highest marginal effect in the overall model. The item "costs & taxes" is significant in Corcelles-Cormondrèche but not in Peseux, which is not surprising since the tax rate in Corcelles-Cormondrèche is lower than in the other municipality. In case of amalgamation, citizens of the latter municipality could certainly expect a lower tax rate. It is the other way round for the items "control" and "development".

Similarities between respondents of both municipalities are more frequent for the items representing expectations: only "politics", which is not included in the restricted model for Corcelles-Cormondrèche and "control",(which is almost significant at the 5% level) are significant in one municipality alone: all others are significant in both. The marginal effect of "development" is strong in both cases. The "politics" variable positively influences the opinion of those respondents who mentioned it as an expectation in Peseux only. Interestingly, as already pointed out, it has a negative influence on the attitude of those who quote it as a fear. The same interesting finding applies for the item "control", with a strong marginal effect as an "expectations" variable.

Although not reported in the table, some other variables such as "identity" (as an expectation), were tested but do not appear to be significant whatever the model. Notably, respondents originating from the village do not have a different attitude from those who originate from elsewhere. The same finding applies for respondents who carry out most of their private activities in the village: they are satisfied with regard to the existing co-operation between the municipalities concerned. No particular marital status has a significant impact. At the end of Table 5, and for each estimation, we report the likelihood ratio index. This is a measure of the degree to which our model is appropriate to the data, also known as pseudo-R^2. This index represents the improvement of our estimated model in terms of likelihood as compared to a restricted, naive model including only a constant term. In our case, the computed index is quite low and reflects a low adjustment of our model to the data. An explanation for this may come from (important) variables which we were unable to collect by means of our questionnaire.

Table 5
Estimated ordered probit models explaining the level of favour regarding municipal co-operation

Explanatory variables	Corcelles-Cormondrèche		Peseux		Overall model	
	Coefficients (z stat)	Marginal effect on the probability of amalgamation[a]	Coefficients (z stat)	Marginal effect on the probability of amalgamation[a]	Coefficients (z stat)	Marginal effect on the probability of amalgamation[a]
Expectations						
Control[a]	.252 (1.91)	.082	.452 (3.93)**	.179	.425 (4.93)**	.164
Costs & taxes[a]	.338 (3.15)**	.094	.310 (2.62)**	.119	.374 (4.67)**	.128
Development[a]	.457 (5.83)**	.136	.496 (6.13)**	.192	.486 (8.54)**	.175
Politics[a]	-	-	.290 (2.52)*	.115	.267 (3.19)**	.101
Power[a]	.288 (3.54)**	.089	.263 (3.19)**	.104	.295 (5.08)**	.109
Services[a]	.265 (3.28)**	.080	.279 (3.42)**	.109	.305 (5.19)**	.110
Fears						
Control[a]	-	-	-.231 (-3.06)**	-.090	-.203 (-3.66)**	-.074
Costs & taxes[a]	-.327 (-4.09)**	-.101	-	-	-.161 (-2.92)**	-.059
Development[a]	-	-	-.259 (-3.14)**	-.101	-.164 (-2.67)**	-.059
Identity[a]	-.201 (-2.59)**	-.062	-.226 (-3.00)**	-.088	-.226 (-4.10)**	-.082
Politics[a]	-.159 (-1.97)*	-.048	-.149 (-1.90)	-.058	-.189 (-3.28)**	-.068
Power[a]	-	-	-	-	-.172 (-2.32)*	-.062
Services[a]	-	-	-.146 (-1.92)	-.057	-.160 (-2.84)**	-.058
Individual characteristics						
Age (numerical)	-	-	.007 (3.28)**	.003	.003 (1.89)	.001
Diffage	-	-	-.0004 (-3.51)**	-.0002	-.0002 (-2.88)**	-.0001
Gender (1=women) [a]	-.181 (-2.46)*	-.055	-.162 (-2.37)*	-.064	-.161 (-3.22)**	-.059
Parent of one or more children[a]	.179 (2.31)*	.054	-.197 (-2.58)*	-.078	-	-
Mostly professionally active in the municipality[a]	.352 (2.54)*	.096	-	-	-	-
Living in the municipality for more than 5 years[a]	-	-	-.277 (-3.24)**	-.110	-.139 (-2.23)**	-.052
Feeling of belonging to the municipality[a]	-.421 (-5.37)**	-.122	-	-	-.227 (-4.17)**	-.082
Readiness for closer co-operation with other municipalities[a]	.369 (4.86)**	.115	.428 (5.82)**	.169	.384 (7.27)**	.143
Inhabitant of Corcelles-Cormondrèche[a]	-	-	-	-	-.445 (-8.85)**	-.161
Model summary						
Number of observations used	**967[b]**		**1145[b]**		**2112[b]**	
Likelihood ratio index (pseudo-R^2)	**.0753**		**.0612**		**.0762**	
Likelihood ratio test of constraints (p-value)	**.0949**		**.4757**		**.2534**	

* = significant at the .05 level (two-tailed); **= significant at the .01 level (two tailed)

[a] For dummy variables, the marginal effect is obtained by changing the value from 0 to 1.

[b] Some observations suffered from missing data. For the estimation of the restricted model, we used only those observations that were also included in the unrestricted model in order to run the lr-test. This may result in some loss of information. However, we tested for differences when including all observations for the restricted model, and found no significant differences.

5. Conclusion

Ordered probit models were estimated to explain the attitude of the citizens taking part in a survey of the two small suburban Swiss municipalities of Corcelles-Cormondrèche and Peseux. The survey is based on a short questionnaire mailed to all citizens of voting age. The respondents from the two different municipalities do not favour each of the four proposals for co-operation to the same extent (no co-operation at all, restricted and specific co-operation, systematic and widespread co-operation and amalgamation.) Those of Corcelles-Cormondrèche rather favoured restricted and specific co-operation, i.e. almost a status quo (39%), whereas those of Peseux would prefer tight, institutional co-operation, or more explicitly an amalgamation. This latter solution is chosen by 45% of the respondents in Peseux, compared to 25% in Corcelles-Cormondrèche. The fact that a quarter of the respondents spontaneously mentioned the amalgamation as the solution they would favour is however surprising, since there was no specific or previously debated information on this, meaning that the level of uncertainty regarding the possible intentions was high.

The four degrees of co-operation were used as the four levels of the discrete dependent variable. Apart from the respondents' personal characteristics, i.e. age, gender or parenthood, the specific expectations or fears regarding the process of co-operation appear to influence the respondents' opinion significantly. Naturally, the impact of each specific expectation is positive in the sense that respondents who quoted it were more open to the idea. On the contrary, the impact of fears is negative. The expectations that were the most frequently mentioned are: reduced costs and taxes, improved municipal services, enhanced economic development and increased power of negotiation. Regarding fears, increased costs and taxes and a loss of the village's identity were those most commonly quoted. All these "expectations" and "fears" items with the exception of "identity" were revealed as significantly influencing the respondents' attitude. The marginal effects tell us that the expectations regarding enhanced municipal development together with that of tighter control over local authorities have the strongest positive impact on the people's openness towards amalgamation. In contrast, when mentioned as fears, all items have about the same degree of negative impact on the openness, though the marginal effects are less powerful in these cases.

The model was not only estimated for respondents of both municipalities together, but also for each individual municipality. It thus allows us to identify possible departures from the overall model. The model for the respondents living in Corcelles-Cormondrèche shows that, if quoted, the expectation of increased control has no

significant positive impact. Quoted as a fear, this item has no significant negative impact either. The same finding applies for curbed development, a loss of negotiation power and a deterioration in municipal services. In Peseux, expectations regarding development and control play the most important role when measured in terms of marginal effect on the probability of favouring amalgamation. The fear of an increase in costs and taxes is insignificant if quoted by respondents of this village. Findings are identical in case of a loss of negotiation power and a deterioration in municipal services.

These pieces of information can be used as political clues in the process leading to closer co-operation between municipalities and possibly to amalgamation. In fact, the utmost attention should be paid not only to individuals' expectations, but also to their fears regarding such an institutional change. Meeting expectations, limiting or avoiding the reasons for fear, and providing information on the issues concerned can indeed help avoid the rejection of a proposed solution at the time when a decision on its implementation has to be taken or if such a decision is put to a ballot referendum.

Although the number of significant variables included in the models is quite high, their explanatory power remains rather low, meaning that other possible independent variables should be included. In that respect, we were limited by the questions the respondents were asked to answer. In turn, the number of questions was restricted by the fact that we wished to keep the questionnaire short. Further research could therefore aim to enlarge the scope of the model. This could be achieved by including – to a greater extent than in our research – issues from various disciplines of research beyond those of economics, namely sociology, psycho-sociology and political sciences.

Notes

1. To the extent that the co-ordination costs are added to the costs of the various municipal services, we conceded that the collaboration or amalgamation process also contributes to the economies of scale in this area.
2. Of course, the bargaining power towards subcontractors may also be reinforced and thus reduce the costs of their work.
3. This argument follows that of Eichenberger (2004), who advocates competition among politicians. This can be achieved if politicians from outside the circumscription are allowed to run for an election in that circumscription, i.e. if the supply of politicians is increased.
4. This model is known as an ordered probit model. Compared to an estimation relying on a logistical distribution (known as ordered logit), the ordered probit estimation leads to a higher estimated log-likelihood. Thus, since our goal is to maximise the likelihood function (which is the same as maximizing the log-likelihood function), the normal distribution better suits our data. Moreover, both estimations yield similar estimation for the parameters.
5. 2003 Cantonal population survey.

6. The questionnaire was accompanied by a personal introductory letter, addressed and signed by the President and the Administrator of the municipality (Municipal Secretary). By returning the questionnaire and its accompanying letter, which also served as a voucher for the draw, each voter was able to take part in the draw. The draw led to two persons being offered a voucher for CHF 200.- for a meal in a local restaurant.
7. The questionnaire was sent at the end of May 2003 and all the responses were collected by the end of June 2003. For the municipality of Corcelles-Cormondrèche, 3,055 questionnaires were sent out, of which 1,274 were returned, i.e. a response rate of 41.7%. For the municipality of Peseux, 4,211 questionnaires were sent out, of which 1,471 were returned, i.e. a response rate of 34.9%. It was not possible to use all the observations made because of missing data for certain variables, including the dependent variable: this explains why the number of variations varies from one table to another depending on the variables considered.
8. For example, willingness-to-pay functions estimated in contingent valuation studies quite often show such a relationship (see Schwab & Soguel 1996)
9. Theoretically, because very few respondents in our sample were older than 85.
10. It should nevertheless be noted that the marginal effects are virtually zero.

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