

2006

National culture influences on European ERP adoption

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Recommended Citation

Miller, Stacy; Batenburg, Ronald; and Wijngaert, Lidwien van de, "National culture influences on European ERP adoption" (2006). *ECIS 2006 Proceedings*. 100.

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NATIONAL CULTURE INFLUENCES ON EUROPEAN ERP ADOPTION

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Abstract

Many corporations have invested in Enterprise Resource Planning (ERP) systems over the last decade. This study investigates the adoption rates of ERP systems from fourteen European countries using the e-Business W@tch dataset. This dataset results from an cross-national survey among over 6,500 companies from different sizes and industries. The study explores if a national cultural framework could be used to explain the differences. The framework used was Schwartz's seven national cultural value types that score countries on conservatism, affective autonomy, intellectual autonomy, hierarchy, mastery, egalitarian commitment, and harmony. The hypotheses about the relationship between cultural values and ERP adoption were tested using multi-level analysis. After controlling for industry and size, it was found that conservatism has a negative relationship while autonomy, egalitarian commitment, and harmony have a positive relationship with the adoption of ERP systems. The paper concludes with a number of managerial considerations.

Keywords: Enterprise Resource Planning systems, national culture, adoption.

INTRODUCTION

Enterprise Resource Planning (ERP) systems have become widely used standard software applications that assist the flow of transactional data by integrating business applications in a uniform IT environment (Shapiro 2001). Most ERP systems are based on the principle of a central database that enables a single point of data entry, processing, storage and transport. This principle of centralized information architecture governs the central steering of different functional and cross-functional modules such as production planning and scheduling, finance and control, logistics, personnel management, and so on (Klaus & Rosemann & Gable 2000). ERP support organizations that aim to deploy a process view of the firm and the ability to standardize its business processes (Nah & Lau & Kuang 2001). How to achieve prompt results and significant return on investment from ERP systems however, is subject to continuous study and debate among both academics and practitioners (cf. Wagner & Howcroft & Newell 2005). Many claim that the non-technical aspects of ERP projects are most critical considering the radical (i.e. integral) changes to business processes and management control (Kraemmergaard & Rose 2002). ERP implementations affect the firm's management model, culture, and organizational structure leading to a wide organizational transformation process (Davenport 2000, Caldas & Wood 1998).

Although 'intangible conditions', like organizational culture and national values, are considered as very relevant for the deployment of enterprise resource planning systems (ERP) systems, only limited empirical research is available on this subject. In general, national culture has been found to be an important factor in business decisions such as adoption of information systems (IS) and IT (Sirmon & Lane 2004, Chui & Lloyd

& Kwok 2002, Png & Tan & Wee 2001) and IS success (see Agourram & Ingham 2003 for an overview). With regard to ERP, Van Everdingen & Waarts (2003) used Hofstede's dimensions in 10 Western European countries and found that medium-sized companies with lower scores of uncertainty avoidance, masculinity, and power distance and/or a higher score of long term orientation increase the chance of adopting ERP. Also, they applied Hall's cultural dimensions and found that countries with low-context and monochronic scores tend to have higher adoption rates. Another example is Krumholtz et al. (2000) who presented a case study of a large pharmaceutical corporation with subsidiaries in UK and Sweden. He found that problems, such as the organizational fit of SAP R/3 were related to organizational culture but not directly to national culture.

This study aims to improve this research field by looking at the influence of national culture on the adoption of ERP in a set of 14 countries using Schwartz's dimensions. Besides using a framework from Schwartz that overcomes many problems of the Hofstede and Hall frameworks, this study will use newer data in more industries and of various sizes from both Eastern and Western Europe. As we will show later, hierarchical linear modeling (HLM) is used to match two level dataset involved in this study (the national level and the organizational level).

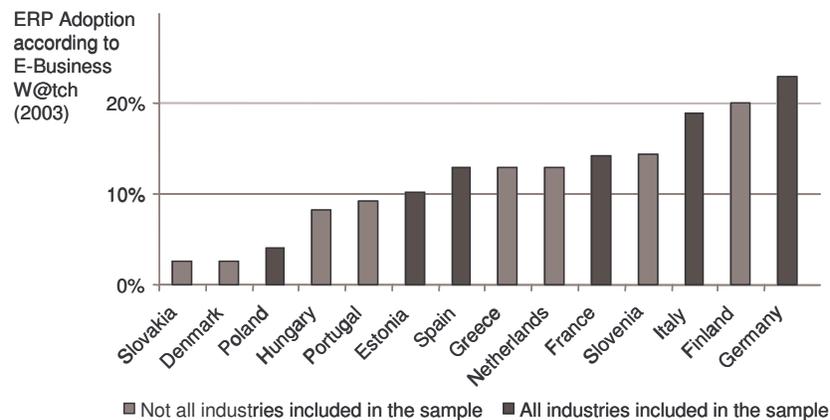


Figure 1. ERP Adoption Rate (% with ERP implemented) for 14 European countries within the EBW-2003 dataset

The empirical base of this paper consists of the e-Business W@tch's Decision Maker Survey on e-Business 2003 (further: the EBW-2003 survey), a large-scale recent survey among over 6,500 European firms covering IT and e-business organized by the European Commission. As can be seen in Figure 1, there are significant differences in ERP adoption between the European countries within this survey. To illustrate, only 4% of organizations in Poland had adopted ERP by 2003 while 23% in Germany had an ERP system. The black bars are countries that included observations in all industries while the dark grey bars represent countries with a fewer number industries investigated. The adoption rates are difficult to compare with those from Van Everdingen and Waarts (who report much higher levels of adoption) as they surveyed fewer industries for only medium sized companies with the help of a sponsor, an ERP vendor.

The main goal of this paper is to see if national culture can be used to explain these differences in ERP adoption rates. By looking at how cultural differences influence the adoption rate, it can lead to suggestions of how ERP vendors can serve receptive customers from different countries and help them to cope with national values during the adoption and implementation process.

In the next theory section, we will first explore if and how Schwartz's national culture dimensions have relationships with ERP adoption. Then the dataset is described and the 14 countries used in this study: Denmark, Finland, France, Germany, Greece, Italy, Netherlands, Portugal, Spain, Estonia, Hungary, Poland, Slovakia, and Slovenia. The analyses to test our hypotheses consist of two techniques. First, scatter plots are used to depict the relationships between cultural value and ERP adoption on the (aggregated) country level only. Second, HLM was used to estimate the significance and strengths of the predicted relationships on both

the organizational level and the national level simultaneously, controlled for industry type and organizational size. We close with conclusion, discussion and suggestions for further research.

1 THEORY

Schwartz's (1994) framework specifies dimensions of national values that are on an aggregate level for nations and are used to seek relationships with ERP adoption rates. Schwartz has created a framework for measuring how national cultures differ.

We used Schwartz's framework because it has many advantages to the more widely-known work of Hofstede (1997). First, Smith and Bond (1998) state that Schwartz started with a study within each country by a thorough sampling of the values that might be important in various national cultures and then checked that the values have consistent meanings across cultures. This is unlike Hofstede who worked on an ad hoc basis. Second, Schwartz included a check of the values from Hofstede's dimensions with additional values to be more exhaustive. His results proved to achieve a refinement with more dimensions rather than a contradiction of Hofstede's earlier work. Third, his findings are more recent than Hofstede and they include many of the former Eastern European nations. Also, Schwartz creates different values for the culture and individual levels to help distinguish between them (Bond et al. 2004).

Schwartz defined seven significant national culture values in his research: conservatism, affective autonomy, intellectual autonomy, hierarchy, mastery, egalitarian commitment, and harmony (1994, p.101-105):

- *Conservatism* is "those values likely to be important in societies based on close-knit harmonious relations, in which the interests of the person are not viewed as distinct from those of the group." Estonia has the highest score out of the selected countries in this study.
- *Intellectual autonomy* is "a more intellectual emphasis on self direction." France has the highest score out of the selected countries.
- *Affective autonomy* is "more affective emphasis on stimulation and hedonism." France has the highest score out of the selected countries.
- *Hierarchy* is "value type as emphasizing the legitimacy of hierarchical role and resource allocation." Poland has the highest score out of the selected countries.
- *Mastery* is "values in this region emphasize active mastery of the social environment through self-assertion." Greece has the highest score out of the selected countries.
- *Egalitarian commitment* is "the values that constitute it exhort voluntary commitment to promoting the welfare of other people." Portugal has the highest score out of the selected countries.
- *Harmony* is "value type, emphasizing harmony with nature." Italy has the highest score out of the selected countries.

2 HYPOTHESES

What do we expect about the (potential) influence of cultural values on the ERP adoption of firms? Below, we conduct specific hypotheses for each of Schwartz' the national values as previously described.

To start with Schwartz's first cultural value, conservatism, we basically (i.e. given all other conditions and factors) expect that this does not facilitate the introduction of an ERP system in organizations. The main argument is that actors in conservative societies are very adamant on not losing their (public) image and therefore are prone to being risk adverse (Chui & Lloyd & Kwok 2002). This makes ERP less attractive to organizations in these societies since ERP is known as a complex and risky investment. Meanwhile there are many publications of ERP failures where companies have filed for bankruptcy due to problems with their ERP systems (Scott & Vessey 2000, Dryden 1988). The first hypothesis to be tested is formulated as:

Hypothesis 1: ERP adoption rates are lower in countries with higher levels of conservatism.

Autonomy, as a divisible value type, represents values which basically find ERP systems appealing for organizations. It contains two subdivisions, intellectual and affective. Autonomy expresses an openness to

change. Since ERP systems demand that a company rethinks its processes and usually change them, openness and readiness for change is crucial. This is supported by the notion of change management, including business process redesign, listed as one of the critical success factors (cf. Light & Holland 1999, Davenport 2000, Nah & Lau & Kuang 2001, Soja 2004). With respect to ERP adoption, autonomy contradicts the defensive climate within conservative countries as argued in the former hypothesis. Two similar hypotheses can be formulated as:

Hypothesis 2a: ERP adoption rates are higher in countries with higher levels of affective autonomy.

Hypothesis 2b: ERP adoption rates are higher in countries with higher levels of intellectual autonomy.

Basically, we believe hierarchy is also likely to support the adoption of ERP in organizations. Hierarchy promotes the acceptance of authority which helps to safeguard the status quo of management and social order. ERP can help reinforce this power structure of an organization by providing managers with centralized information, standardization and more control over their business. Bureaucratic control structures can particularly be realized and confirmed as information systems are integrated by ERP and hence centralization becomes much easier (cf. Govers 2003, Elmes & Strong & Volkoff 2005). Hierarchy and the previous cultural value, autonomy, seem to contradict each other on the same dimension. With respect to ERP adoption however, they represent two different viewpoints. Whereas autonomy (and conservatism) refers to the willingness of companies to adapt and change, hierarchy addresses the organization's preferences for a certain type/level of internal structuring, i.e. a top down steering of processes and governance. Hence, the hypothesis to be tested is:

Hypothesis 3: ERP adoption rates are higher in countries with higher levels of hierarchy.

In addition to the previous values, mastery is expected to basically promote the adoption of an ERP system in organizations. It is associated with entrepreneurial spirit to control and master the environment along with the wish to get ahead of others. This will support the adoption of ERP systems since ERP - potentially - improves effectiveness, efficiency and competitive advantage (cf. Banker & Janakiram & Konstans & Slaughter 2000). In nations with high levels of mastery, companies are expected to be more tended to use risky policies so managers can show off their talents (Caldas & Wood 1998, Light & Papazafeiropoulou 2004, Chui & Lloyd & Kwok 2002). Similar to the argument behind conservatism and autonomy, ERP adoption is expected to be positively related to values of mastery in a society since it is a risky venture that can have a huge payoff or failure. The particular argument with mastery is however, that external competition and so-called isomorphic pressures primarily drive the tendency to adopt ERP (Benders & Batenburg & Van der Blonk, 2004), as formulated in the next hypothesis:

Hypothesis 4: ERP adoption rates are higher in countries with higher levels of mastery.

The two final cultural values defined by Schwartz - egalitarian commitment and harmony - are expected to have significant influence on society, but not on organizational decision making. While the previous cultural values can be seen as drivers of managerial attitudes to take risks, or contingencies to change, adapt, control, progress and distinct companies, both egalitarian commitment and harmony are dealing with non-economic domains that are 'above' the level of organizations and management (Johnson & Lenartowicz 1998). We recall that egalitarian commitment is about voluntarily promoting the wellbeing of other people, while harmony emphasizes peace with the world and nature. As we believe these values do not have much in common with ERP and ERP adoption, we expect no relationship between these and hence exclude its empirical testing.

Our five hypothesis to be tested, including their assumptions to bridge the country and organizational level of observation, is jointly presented in the following exhibit, Figure 2. The hypotheses are depicted in this figure as a continuous line between national culture and the left-hand side and the adoption of ERP on the right-hand side. The dashed vertical line indicates the transition from variables and concepts on the national level to those on the organizational level.



Figure 2. Predicting the relationship between Schwartz' cultural values and ERP adoption rates, bridging

3 DATA AND METHODS

3.1 Variable Constructions

As described in the introduction, the adoption rates along with other variables are answers from initially 10,000 respondents in the EBW-2003 survey. The central survey question was: "Has your company implemented an ERP, that is an Enterprise Resource Planning System?". This is the representation used to measure the adoption rate with "Yes" as a positive answer, "No" and "Don't know" as negative answers. The advantage of this measure is that it gives much more assurance in terms of behaviour and investment than questions of whether an organization is planning to implement an ERP system (as used by Van Everdingen and Waarts, 2003) or is thinking about this. Disadvantages of the EBW-2003 measurement is that respondents might have different opinions of when an ERP system is 'really' implemented (in terms of module roll-out and projects), or what is 'counted' as an ERP system (in terms of hardware and/or software configuration and functionalities). It should be noted however, that most respondents were the IT-specialist of their firm. Hence, it can be expected that they are quite knowledgably of about what is normally defined as ERP (e.g. the answer "don't know" was only given by 2% of all respondents). In addition, we do not have reasons to believe that differences in interpretations of ERP are systematically biased within countries, industries or other relevant subgroups in the data.

To test the formulated hypotheses, the five cultural value scores for each of the 14 countries were taken from the tables in Schwartz (1994) and manually merged with the EBW-2003 dataset as an additional country variable. It might considered an additional complication that Schwartz's value scores are based on country data from the nineties of the previous century, whereas the adoption rate was queried by the EBW-survey in 2003. We believe however, that the value differences between countries are rather stable over time for at least 10 to 15 years. It is generally acknowledged that cultural characteristics at the societal, organizational and even individual level slowly change over time.

When correlating cultural values and ERP adoption on the organizational level (as will be done in the second step of our analysis), it obviously makes sense to control for the companies' industry and size. Davenport (2000) finds industry and size to be gross factors which influence the decision process of ERP adoption. This is confirmed by the yearly EBW reports, that systematically show that e-business activities (including the use of ERP) significantly differs according to sector and size.

The EBW-2003 dataset classifies organizations into nine different industry sectors: textile industries, chemical industries, electronics, transport equipment, retail, tourism, ICT services, business services, and health and social services. Because historically ERP comes from manufacturing roots (i.e. Materials Resource Planning, MRP), we basically distinguish manufacturing and non-manufacturing companies. In practice of our statistical analysis, we recoded industry into a binary variable (manufacturing is coded 1, companies from other industries are coded as 0).

The size of a company is considered a proxy for the level of coordination an organization needs in terms of complexity, scale, and global presence (Davenport 2000). From the EBW-2003 dataset, two representations of size were used: (1) the number of employees and (2) the number of establishments of the company. Considering the distribution of the latter size indicator, the number of establishments is recoded into a binary variable as well (only one establishment is coded as 0, more than one is coded as 1).

3.2 Methods and Techniques

In order to investigate if cultural values account for the differences in ERP adoption on the national level as expected, scatter plots are firstly used to show the average ERP adoption for each of Schwartz’s value types. Graphical display is most useful for this situation with only fourteen observations, i.e. countries. For each hypothesis, we draw a virtual fitted line (based on the principle linear regression) through the fourteen points of observations. Obviously, this type of analysis does not allow conclusions about significance or strength of the predicted relationships, but it does give a first impression about the support for the hypotheses.

Therefore (and in addition) we perform multi-level analysis, i.e. Hierarchical Linear Modeling (HLM). According to Snijders and Bosker (1999) multilevel analysis “is a methodology for the analysis of data with complex patterns of variability, with a focus on nested sources of variability” (p.1). Using HLM within this context is advantageous since it takes into account the dependencies between the levels. Ignoring the dependencies can lead to many errors when using other statistical analyses such as ecological fallacy, a ‘shift in the mean’ during aggregation, an ignorance cross-level interaction effects, and an exaggerated sample size. In our case, we apply HLM since there is so-called nested sources of variability in the basic EBW-2003 dataset. The nesting is hierarchical as the variation between organizations is intertwined with the variation between the countries they are located in. HLM allows us to test how the country level variables affect the organizational adoption while controlling for other variables on the organizational level. Instead of aggregating the data to a small sample size of only 14 countries, HLM estimates the country differences while taking the differences between the individual organizations into account simultaneously. In doing this analysis, we assume equal variance across the cultural values on the national level. Consequently, we can not compute the proportion of variability explained by the HLM model. What we will show are the coefficients and their significance level. We will accept the hypotheses if the p-value is smaller than .05 using a two-tailed test.

4 RESULTS

There are 6,539 organizations in the EBW-2003 data set used. As was presented earlier in Figure 1, samples per country differ in size as in some all the main sectors were included while in other only a few sectors. The sample composition according to industry and size is the same for most countries however (see Table 1). This is partly the result of stratified quota sampling (ebusiness Watch 2004), as well as the recoding of industry and size as previously described in section 4.1.

	Industry		Number of employees				
	Service	Manufacturing	1-9	10-49	10-49	50-249	250+
Estonia	244	168	141	111	111	125	35
Hungary	80	151	79	58	58	66	28
Poland	363	279	192	166	166	214	70
Slovakia	105	93	83	45	45	40	30

Slovenia	216	56	88	78	78	79	27
Denmark	197	0	63	72	72	44	18
Finland	76	144	73	71	71	54	22
France	457	379	319	162	162	272	83
Germany	486	389	328	187	187	270	90
Greece	73	246	101	102	102	91	25
Italy	492	382	288	227	227	266	93
Netherlands	202	93	108	100	100	61	26
Portugal	200	95	96	78	78	91	30
Spain	487	386	298	215	215	270	90
Total	3,678	2,861	2,257	1,672	1,672	1,943	667

Table 1. The EBW-2003 dataset used in this analysis by country, industry and size

As a first ‘screen test’ of our five hypothesis, the predicted differences between countries are presented below with scatterplots, showing the mean ERP adoption rate for each country against their score for each of Schwartz’s value types. We refer to Schwartz (1994) for the exact construction of the country scores on each cultural value.

According to the patterns showed in Figure 3, the hypotheses for conservatism and (both affective and intellectual) autonomy seems to be supported by the expected decreasing and increasing fitted lines respectively. If we accept this visual inspection as a type of hypothesis testing, the hypotheses for hierarchy and mastery are not supported by the scatterplots. The fitted lines within these plots are flat and clearly lacking any direction and slope.

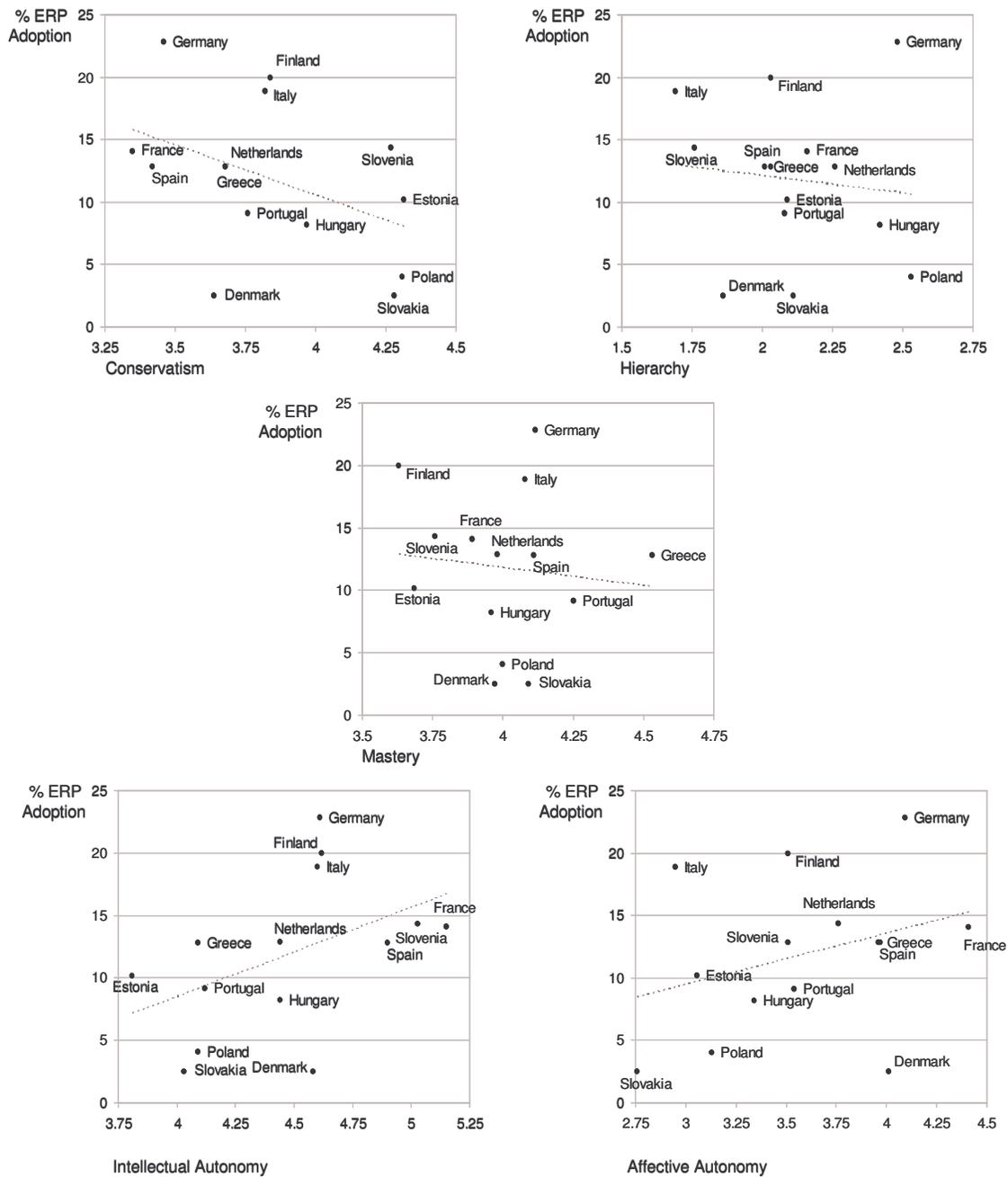


Figure 3. First hypothesis test: scatterplots of ERP Adoption Rate against five Schwartz' value score for 14 countries including fitted line.

From the pictures it can also be seen that a leading country in ERP adoption like Germany strongly fits within the hypothesis on conservatism and autonomy, but does not support the suggested argumentation behind the (positive) effects of hierarchy and mastery on ERP adoption. The same holds for Slovenia for instance, a country that holds a relative position in ERP adoption.

As argued above, we extend the exploratory visual method with a more thorough statistical test of the hypotheses by applying HLM. As explained before, the EBW-2003 dataset and Schwartz's data are at

different levels and HLM can be used to adjust for variation between the levels. In practice, two different types of models were used (see Table 2 below). Model A concerns the basic effects of each of the five cultural values (j) that we selected from Schwartz's framework. Model B does the same, but additionally controls for industry type and organizational size on the organizational level (ij). For both models, HLM simultaneously estimates the effects of cultural values on the organizational level (level 1) and the country level (level 2) as nested sources of variability.

Level	Model A	Model B
1 Organizations	$ERP\ Adoption = \beta_{0j} + e_{ij}$	$\beta_{0j} + \beta_{1j} Employee_{ij} + \beta_{2j} Establishment_{ij} + \beta_{3j} Industry_{ij} + e_{ij}$
2 Countries	$\beta_{0j} = \gamma_{00} + \gamma_{01} Cultural\ Value_j$	$\gamma_{00} + \gamma_{01} Cultural\ Value_j$

Table 2. The two HLM models to be applied

The next Table 3 shows the results. Key coefficients are the γ_{01} 's, representing the cultural value effect not controlled for industry and size (Model A) and controlled for industry and size (Model B). The γ_{00} -coefficients can be considered as slopes of a regression line, indicating the mean level of ERP adoption for the particular cultural value. As each model is tested for each cultural value separately, in total 10 different models were constructed and estimated.

	Conservatism	Affective Autonomy	Intellectual Autonomy	Hierarchy	Mastery
Model A					
γ_{00}	.48*	.01	-.16*	.20*	.04
γ_{01}	-.09*	.03*	.07*	-.03	.02
Model B					
γ_{00}	.30*	-.15*	-.35*	.03	-.08
γ_{01}	-.09*	.03*	.07*	-.03	.01
β_{1j}	.01*	.01*	.01*	.01*	.01*
β_{2j}	.10*	.10*	.10*	.10*	.10*
β_{3j}	.07*	.07*	.07*	.07*	.07*

*: Standard coefficient is significant ($p < .05$).

Table 3. Second hypothesis test: effects of cultural value on ERP adoption according to HLM-analysis

The main result from HLM-analysis is that conservatism, affective autonomy and intellectual autonomy hold significant relationships with ERP adoption (γ_{01} -coefficients within the A-models are -.09, +.03 and .07 respectively), but hierarchy and mastery do not (γ_{01} -coefficients within the A-Models are -.03 and +.02). Controlling for industry type and organizational size has no effect on the strength of these relationships (see the row of γ_{01} -coefficients in Models B). All slopes of conservatism, affective autonomy and intellectual autonomy (γ_{00}) are significant in both models too, confirming that the 14 countries basically differ in ERP adoption according to these culture values. Finally, the coefficients for industry and size (β_{1j} , β_{2j} and β_{3j}) were found to be significant in all models, indicating that these are relevant control variables in relation to the adoption of ERP.

It can be concluded that the HLM-analysis strongly supports our earlier findings from the scatterplots. ERP adoption among European firms is significantly related to the level of conservatism and autonomy that characterizes a particular country. Hence, hypotheses 1, 2a and 2b are supported. Hypothesis 3 and 4 can not be supported by our chosen statistical techniques. The implications of these results are discussed in the next section.

5 DISCUSSION AND CONCLUSIONS

Through the analysis of survey data about 6,500 companies from 14 nations we can show that (1) countries with high scores on effective autonomy and intellectual autonomy have higher adoption rates in ERP, while (2) countries with high scores on Schwartz' measurement of conservatism have lower ERP adoption rates. These results demonstrate that a cultural climate of openness to change and a (national) tradition of willingness to adapt existing situations, are indeed conditions that influence the behaviour of managers within organizations. The particular value of this finding consists of the fact that 'intangible factors' as national cultural value, appears to be related to the decision behaviour of managers with respect to 'tangible investments', i.e. ERP systems that are known for their high technological and financial significance. This actually supports the general notion that decisions around the adoption and implementation of IS/IT are subject to culture and social norms (cf. Orlikowski 2000, Cooper 1994)

Still, the country effects found in all of our models – although controlled for multi-level nesting, size and industry – are significant but weak. This implies that the suggested relationship between national culture and ERP is a indeed complex one, and subject to many intermediary factors as suggested by our conceptual model.

5.1 Limitations

While this study overcomes a number of the limitations from the previous cross-national ERP studies as by Van Everdingen and Waarts (2002), it obviously has its own limitations. One is in the hypotheses proposed and the limited relationships that are actually investigated. An interesting extension is to explore if national culture might have specific effects for specific industries or size classes, because these have their own specific cultural and institutional characteristics. This would enable a further validation of Schwartz' theory, including the estimation of a potential interaction effect between country and industry on the ERP adoption of organizations. Also, other variables representing countries can be used to analyze the robustness of the cultural value effects. In particular national features as GDP and relevant contexts such as IT penetration or competitive pressure can be interesting, as suggested by Tornatzky and Fleischner (1990).

Secondary data such as national statistics cannot always be matched with the data from the EBW survey however. Hence, limiting the opportunities to explore the explanatory value of these additional variables. One important limitation of the dataset used is that not every industry is represented in every country, as can be seen in Table 1.

5.2 Managerial Considerations

“To facilitate global businesses, international service providers and corporate managers need to know precisely how cultural differences may affect corporate adoption of IT infrastructure” (Png & Tan & Wee 2001, p36). These results can help with both the marketing and decision-making involved with the adoption of ERP software and possible other new innovations. It can help guide consultants and ERP vendors to where they should concentrate their efforts to generate sales. Also, it can help managers gain acceptance of their new ERP system.

For example, organizations located in countries with strong values of conservatism should place more importance on the management side of implementation than the technical side. To be able to adopt ERP systems earlier, one should recognize that conservative cultures are very open to relying on vertical sources of guidance (Smith & Peterson & Schwartz 2002). This can be taken advantage of in the implementation phase by ensuring all of the top management is active in supporting the ERP system and giving clear expectations for the ERP system. Top management should offer support by thoroughly communicating the new ERP system to employees and by providing sufficient resources (Nah & Lau & Kuang 2001). Poland is a prime example of a high conservative country that has low adoption of ERP. Following this reasoning, this

Might be due to its history of communism, in which the state dictated which innovations to accept. Therefore, it may be hard to find attention for ERP systems within its organizations.

Managers can take advantage of the cultural value type of autonomy by providing understanding through training. This may increase the number of overall ERP adoptions. People in autonomous countries usually are characterized by individuals pursuing their own interests and thinking independently (Johnson & Lenartowicz 1998). This can be taken advantage of by providing extensive training for the use of ERP systems so that personnel can form their own individual opinion over the benefits of ERP systems by seeing an overview of how ERP systems work. That way, the employees feel involved in the implementation process and willing to proceed with it. As we know from general research that lack of training is considered to be a major risk factor for ERP systems (Sumner 2000), we suggest that this is particularly the case for countries with a strong autonomous cultural values. For example, Germany scores very high on autonomy so a high acceptance of ERP is very important in this country. Germanies' traditional autonomy's support of new ideas may have foster to develop a leading vendor of ERP systems (SAP) and encouraged its organizations to adopt it.

To conclude, the results of this research can also be helpful to future researchers in selecting case studies to look at ERP adoption decision more in-depth. It can provide a reason for selecting countries based on their national cultural values in which to compare.

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