

# **Testing for Linear and Quadratic Effects between Price Adaptation and Export Performance: The Impact of Values and Perceptions**

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## **Abstract:**

Managerial perceptions are essential in explaining strategic decisions. It is, therefore, surprising that despite the number of studies that have examined the impact of managerial characteristics in exporting, little research has been reported in the export literature that investigates the importance of managers' perceptions on strategic decisions and resultant performance outcomes. To address this gap in the literature, the authors examine the key determinants of managers' psychic distance as well as its influence on international pricing decisions, and this in turn, on the export performance of SMEs. We also examine the quadratic effects of price adaptation on export performance. This is particularly relevant since price adaptation and export performance have been assumed in the literature to have a linear relationship. The results show that managers' perceptions have a significant impact on pricing decisions and resultant performance outcomes. Our findings also indicate that price adaptation has an inverted U-shaped relationship with export performance.

**Keywords:** export performance, psychic distance, values, price, perceptions

## ***Introduction***

Exporting is the most widely used entry mode for international expansion and it is a particularly appropriate mode of entry for small and medium sized enterprises (SMEs). In today's globalized world, the domestic economy is dependent on external markets to grow and prosper. Consequently, governments have acknowledged the importance of export activity to the economic development of their countries. The premise that successful export operations are crucial to both the firm and national prosperity has gained much support in the literature (Diamantopoulos and Kakkos 2007; Ural 2009). Therefore, understanding the drivers of export performance is an important area of research for academics, practitioners, and policy-makers.

While a substantial number of studies have examined the determinants of export performance, the importance of managers' perceptions to explain strategic decisions and performance has not received sufficient research attention in the export literature. This is a major limitation in the current literature, given that managers play a crucial role in the case of SMEs and are considered the principal force behind the initiation, development, maintenance, and success of a firm's export operation (Sousa, Ruzo, and Losada 2010). In addition, managers' perceptions drive their strategic decisions and behavior (Boyd, Dess, and Rasheed 1993; Drogendijk and Slangen 2006). Indeed some studies (e.g. Axinn 1988) found managers' perceptions to be the most important factor in explaining the export operations and performance of firms. Although little research has been done in the export literature, researchers in the strategic management literature (e.g. Anderson and Paine 1975; Bourgeois

III 1985; Hambrick 2007) acknowledge that environmental perception should be considered as a key determinant of strategic choices. Moreover, the internationalization literature acknowledges that when managers select a foreign market, they are influenced by their environmental perceptions regarding the degree of difficulty of entry into that market (Johanson and Vahlne 1977). For instance, the perception that a decision maker has of a foreign market may discourage the firm's international diversification into that country which in turn may lead firms to forego profitable business opportunities abroad. From a practical perspective, therefore, the importance of managers' perceptions should not be overlooked because it significantly influences the activity of the firm in the international arena. To address this gap, we propose to examine the impact of managers' psychic distance on strategic decisions. Despite the inherently cognitive nature of the concept, past studies have in the main, neglected the perceptual component of psychic distance (Child, Rodrigues, and Frynas 2009). Taking into account the perceptual nature of the concept, psychic distance in this study refers to managers' perceptions of differences that exist between the home and foreign country.

Thus, the main purpose of this study is to investigate the key determinants of the managers' psychic distance as well as its influence on the process of strategic choice and resultant performance outcomes. We focus on cultural distance, export assistance, and personal values as the determinants of psychic distance. Additionally, we examine the impact of psychic distance on price adaptation, and this in turn, on the export performance of the firm. Thus, the contribution of this study is as follows. Firstly, we examine the importance of managerial perception in explaining strategic decisions. We also test the empirical usefulness of the psychic distance construct as some authors have questioned its value (e.g., Stöttinger and

Schlegelmilch 2000). The influence of managers' personal values is also analyzed. While previous studies have focused on examining a set of managerial characteristics that influence exporting (e.g. Contractor, Hsu, and Kundu 2005; Lages, Jap, and Griffith 2008), the literature has given scant attention to the potential impact of managers' perceptions and personal values on firms' export activities. Lastly, we select price adaptation as our strategic variable. Pricing decisions are of paramount importance to the success of the firm in foreign markets (Raymond, Tanner Jr. and Kim 2001). In today's globalized business environment, managers need to be careful when setting prices for export markets due to an increasingly competitive global environment, complex government regulations and gray market considerations (Myers, Cavusgil, and Diamantopoulos 2002). From a practitioner's viewpoint, understanding the impact of pricing decisions, particularly the degree of price adaptation that may be required, is vital because of the direct effect such decisions have on the firms' revenue and profit levels (Theodosiou and Katsikeas 2001). However, despite its critical importance in explaining the export performance of the firm, price is the most neglected variable when compared with the other elements of the marketing mix (Sousa and Bradley 2009). This need for more research on the relationship between price adaptation and export performance is even more relevant since the pattern of findings in the literature regarding the impact of price adaptation on export performance is mixed and often contradictory (Sousa and Bradley 2008). Such lack of consistency in findings might be attributed to a lack of precision when specifying the form of the relationship between price adaptation and export performance. Although, price adaptation and export performance is assumed to have a linear relationship in the literature, it is suggested by Özsomer and Simonin (2004) that a non-linear relationship may exist between the degree of standardization of marketing programs and export performance, and that this needs to be taken into account

when examining the link between price adaptation and export performance. Consequently, we propose to address this gap in the literature by examining whether the relationship between price adaptation and export performance is linear or quadratic.

The next section presents the conceptual background to the research and develops specific research hypotheses. This is followed by a description of the research methodology. After presenting the results, the paper concludes with the discussion and implications of our findings.

## ***Theory and Hypotheses***

### **Theoretical background**

The term psychic distance first appeared in the work by Beckerman (1956) and Linnemann (1966) before it became well known in our field due to the contributions of the Uppsala school in explaining the internationalization process of firms (e.g. Johanson and Vahlne 1977). Since that time, a variety of definitions have been debated (Sousa and Bradley 2008). Johanson and Wiedersheim-Paul (1975) defined psychic distance in terms of factors preventing or disturbing the flows of information between firm and foreign market. They identified differences in language, culture, level of development, and level of education as examples of such factors. In line with this conceptualization, psychic distance was often measured using factual or statistical items. Another approach has been suggested by Evans, Treadgold, and Mavondo (2000) and Sousa and Bradley (2006) who argue that in order to understand the concept it is necessary to focus on the psychic aspect of distance. Psychic

refers to something in the mind of each individual. According to Evans and Mavondo (2002), it is in the mind's processing, in terms of perception and understanding of the cultural differences that form the basis of psychic distance. The notion of perception is crucial to the understanding of the concept of psychic distance. Definitions of psychic distance should, therefore, incorporate this notion of the perception of differences between markets. Hence, we propose that psychic distance can be defined as the individual's perceived differences between characteristics of the home and the foreign country.

While little research has been done in the export literature, the importance of managers' perceptions in the export activities of the firm is firmly rooted in the international marketing literature (Cavusgil and Godiwalla 1982; Axinn 1988). Managerial decision making regarding strategic decisions often depends largely on managers' own perceptions of the situation. Hence, such perceptions affect strategic choice (Hambrick and Mason 1984). Managers make their decisions based on the perceptions about the situation because strategic situations are not knowable, but are only interpretable (Finkelstein, Hambrick, and Cannella Jr 2008). This understanding that environmental perception is key to explaining the strategy-making process is recognized by several researchers (Aguilar 1967; Anderson and Paine 1975; Bourgeois III 1985). It has been shown, for instance, that managerial perception of environmental change influenced the strategic adaptive response of the organization (Strandholm, Kumar, and Subramanian 2004). This is consistent with a study by Evans, Mavondo, and Bridson (2008), which found that psychic distance has a direct impact on the level of adaptation of the firm's retail strategy. Supportive evidence for the direct link between psychic distance and managerial decision making regarding strategic decisions has also been reported in the international marketing literature. For instance, Martenson (1987)

indicates that the manager's perception of differences between the home and foreign market may explain the degree of adaptation of the international marketing strategy. Consequently, the degree of adaptation of the international marketing strategy tends to be determined by managers' psychic distance in relation to a foreign market.

In terms of determinants of psychic distance, we focus on cultural distance, export assistance and personal values. While cultural distance and psychic distance have been used interchangeably in the literature (e.g. Eriksson, Majkgard, and Sharma 2000; Sethi, Guisinger, Phelan, and Berg 2003), recent studies by Sousa and Bradley (2006; 2008) have shown that the two constructs are distinct. Cultural distance is assessed at the national level and is defined as the degree to which cultural values in one country are different from those in another country. Export assistance is also included as a key determinant and refers to information services provided by external bodies, such as government agencies and trade associations, for the purpose of enhancing the firm's export activity. The rationale for selecting cultural distance and export assistance programs is based on the fact that managers' perceptions should reflect actual environmental conditions and be influenced by programs whose purpose is to provide information about foreign markets. However, managers' perceptions are also influenced by their personal values. Schwartz and Bilsky (1990) define values as desirable goals, which vary in importance and serve as guiding principles in people's lives. Values are characterized as relatively stable criteria that people use to evaluate their own and others' behavior across situations. They are a crucial element for the subjective appraisal of events (Feather 1988) and influence the way in which individuals perceive their environment (Kluckhohn 1951; Schwartz 1992). As a result, the manager's psychic distance towards a foreign market tends to be conditioned by his/her personal values.

Research in organizational decision making indicates that the perception of environmental characteristics, rather than the environment's objective characteristics, is the key factor in the strategy formulation process (Anderson and Paine 1975). Consequently, we focus on the impact of managers' perceptions of the foreign environment on strategic decisions, and in particular the degree of adaptation of the international marketing strategy. Managers' perceptions in this regard, however, could well depend upon their international experience. In this context, we examine the potential impact of psychic distance on the degree of price adaptation and whether this relationship is moderated by the manager's international experience.

Research into price adaptation tends to center around five main areas (Theodosiou and Leonidou 2003): (1) the adoption of a skimming or penetration strategy, depending on the size of the market, consumer characteristics, and competitors' actions; (2) wholesale prices/margins, resulting from differences in the role of wholesalers in the distribution trade of a foreign country; (3) retail price/margins as a result of variations in the size, type, and services provided by retail outlets in the foreign market; (4) end user prices/margins, usually affected by demand conditions such as differences in customer numbers, purchasing power, and economic conditions; and (5) sales/payment terms, which may vary depending on the firm's entry mode, degree of involvement, and response to competitors in overseas markets. However, compared with the other elements of the marketing mix, and despite the calls for more research on pricing decisions, price adaptation has received the least attention in the literature (Theodosiou and Katsikeas 2001; Sousa and Bradley 2009). Nonetheless, pricing

decisions are of paramount importance to a firm's success because of their direct effect on revenue. In addition, a recent review of the literature indicates that the results regarding the impact of price adaptation on export performance have been inconsistent and often contradictory (Sousa, Martinez-Lopez, and Coelho 2008) which suggests the need to examine this relationship more closely. In this context, the suggestion by Özsomer and Simonin (2004) that a non-linear relationship may exist between these constructs could be an explanation for these inconsistencies in the literature. Consequently, we also explore whether this relationship is linear or non-linear.

Building on the preceding discussion, we present a model (see Figure 1) in which psychic distance is determined by cultural distance, personal values, and export assistance programs. Following the argument that the perception of the environment (rather than the objective characteristics) influences the strategy-making process, we expect psychic distance to have a significant impact on the degree of price adaptation. We also examine whether the manager's international experience moderates the relationship between psychic distance and price adaptation. The export performance of the firm, in turn, is affected by price adaptation and the environmental factors of cultural distance and export assistance programs. The model also presents an alternative hypothesis (H9) – that the relationship between price adaptation and export performance is non-linear. The hypotheses underlying this framework are discussed below.

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Insert Figure 1 about here

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## Research hypotheses

Cultural distance is expected to have a direct impact on the firm's export performance. However, the literature fails to provide conclusive support for either a negative or a positive effect of cultural distance on the performance of the firm, as some researchers report a negative relationship (e.g. Hutzschenreuter and Voll 2008) while others find a positive effect (e.g. Gómez-Mejia and Palich 1997). In this study we expect cultural distance to have a negative impact on the export performance of the firm. A firm entering a market that is culturally distant from its home market faces a challenge because it is likely to encounter different economic, institutional and cultural settings. A higher cultural distance also means addressing a larger number of external elements simultaneously (Scott 1992) which may increase the possibility of making wrong decisions, thereby reducing the performance abroad. We therefore predict the following:

*H1: Cultural distance is negatively related to the export performance of the firm*

Several studies indicate that cultural distance is a key determinant of psychic distance (Sousa and Bradley 2006; Dow and Larimo 2009; Håkanson and Ambos 2010). The theoretical argument underlying this relationship is that large cultural differences tend to lead to conflicts and misunderstandings, due to the differences in cultural values that exist between the home and foreign market. Thus, as the cultural distance increases towards a foreign market, the uncertainty and risk a manager perceives tend to increase as well. The greater the cultural distance, the less knowledge about the foreign market is likely to be available (Sousa and Bradley 2006) as communication becomes more difficult and understandings become blurred

(Adler 1997). As a result, preconceptions of countries at a great cultural distance can emerge which will affect the individual's perception of those countries. Therefore, we expect that the greater the cultural distance between the home and foreign market, the greater the manager's psychic distance will be. Thus:

*H2: Cultural distance is positively related to the manager's psychic distance*

As indicated above, personal values are also expected to influence managers' perceptions of psychic distance. Although the literature recognizes the importance of values, it is difficult to know how to assess individual values. In this study, we use Schwartz's theory (Schwartz 1992) to assess individual values. Schwartz derives ten value types: universalism, benevolence, conformity, tradition, security, power, achievement, hedonism, stimulation, and self-direction. These ten value types are further organized into four higher-order value domains: self-transcendence, self-enhancement, openness to change, and conservation. Of the four higher order values, conservation values are most relevant in explaining individual differences in social projection (Amit, Roccas, and Meidan 2010). Social projection is the tendency to estimate that others think, feel, and behave similarly to oneself (Krueger 1998). Our focus is, therefore, on the conservation domain because it is theoretically relevant to explain managers' psychic distance.

The conservation dimension comprises three value types: conformity, tradition, and security. The value types belonging to the conservation dimension emphasize respect, commitment and acceptance of customs and ideas (tradition); safety, harmony, stability of society and relationships (security); and restraint of actions, inclinations, and impulses that are likely to

upset or harm others and violate social expectations or norms. Thinking about conservation values directs attention to one's membership in encompassing groups that offer protection and provide a stable environment (Roccas, Sagiv, Schwartz, Halevy, and Eidelson 2008). People who attribute great importance to conservation values are committed to the customs and ideas of their ingroup; they seek to maintain its safety, harmony, and stability, and wish to preserve the status quo. Emphasis of conservation values implies the motivation to perceive clear distinctions between ingroup and outgroup (Schwartz 1992). A person who emphasizes conservation values tends to identify more with his or her own groups and country and is less tolerant of new and different ideas (Sagiv and Schwartz 2000; Roccas, Sagiv, Schwartz, and Knafo 2002). Thus, people who attribute high importance to conservation values are expected to perceive greater differences between their home country (ingroup) and the foreign country (outgroup). Therefore, we hypothesize that:

*H3: Conservation values are positively related to the manager's psychic distance*

The basic objective of export assistance programs is to act as an external resource for firms to gain knowledge about the foreign market. It refers to information services provided by external bodies such as government agencies and trade associations for the purpose of enhancing the firm's export activity. Typically, these export assistance programs are aimed at SMEs (Diamantopoulos, Schlegelmilch, and Tse 1993; Moini 1998). Previous research shows that SMEs lack of involvement and success in exporting is mainly due to these firms' inability to acquire information and knowledge about foreign markets (Julien and Ramangalahy 2003). As result, many managers of SMEs do not make an effort or are afraid to enter foreign markets. Hence, we expect export assistance programs to have a significant

impact on managers' psychic distance. The provision of more information about the foreign market should lead to less uncertainty (Hart and Tzokas 1999) which should result in a lower psychic distance towards that foreign market. Thus:

*H4: Export assistance is negatively related to the manager's psychic distance*

Export assistance programs are also expected to have a direct impact on the export performance of the firm. According to Czinkota (1994), such programs can help SMEs to improve their export performance by providing information on the market potential, offering low-cost credit and by passing on knowledge from foreign markets and their customers, thereby increasing the likelihood of success in the foreign market. Not surprisingly, a significant number of studies have reported a positive impact of export assistance programs on export performance (e.g. Gençtürk and Kotabe 2001; Lages and Montgomery 2005; Sousa and Bradley 2009). Consequently, the following hypothesis is proposed:

*H5: Export assistance is positively related to the export performance of the firm*

Managerial decision making on strategic matters depends to a great extent on managers' personal perceptions of the situation. Hence, we expect that managers' psychic distance will have a significant impact on the degree of price adaptation adopted by the firm. Several review studies in the literature indicate that the degree of adaptation of the marketing strategy depends on the differences that exist between markets (e.g. Boddewyn and Grosse 1995; Theodosiou and Leonidou 2003). Longitudinal empirical evidence is provided by Özsoy and Prussia (2000), who found a significant positive relationship between market similarity

and marketing standardization. They argue that this relationship was robust and stable over time. In the case specifically of pricing strategies, Theodosiou and Katsikeas (2001) found that the extent to which firms standardize their international pricing strategies depends on the level of similarities that exists between the home and foreign country. A study by Chung and Wang (2007) supports the above findings. Their results indicate that the greater the differences in terms of customer characteristics between the home and foreign market, the more likely the firm will adopt a price adaptation strategy. In a case study of IKEA, Martenson (1987) suggests that if managers believe cultural differences to be significant they are more likely to adapt their retail offer. A recent study by Evans, Mavondo, and Bridson (2008) appears to confirm the above argument. In their study they found that psychic distance increases the degree to which retailers adapt their offer including their pricing strategies in the foreign market. Overall, these findings suggest that differences between markets are likely to result in a more adapted pricing strategy. This is consistent with our view that in order to decide on an appropriate price strategy for the foreign market, managers need to take the characteristics of that market into account. For instance, customers' purchasing power can have an influence on the degree of price adaptation due to its impact on the prices that consumers are willing to pay for certain products (Theodosiou and Katsikeas 2001). Thus, we propose that the greater the differences perceived between the home and foreign country, the more likely it is that the manager will decide to adopt a price adaptation strategy in the foreign market. This leads us to the following hypothesis:

*H6: The manager's psychic distance is positively related to the degree of price adaptation*

Further to the above hypothesis, we propose that the manager's international experience may moderate the relationship between psychic distance and price adaptation. The literature acknowledges that the manager's international experience may influence the firm's export pricing strategies (Tan and Sousa 2011). For instance, Chung (2003) suggests that managers with extensive export experience should consider following a price standardization strategy. By following such a strategy the firm is able to maintain consistent positioning, quality and image in different markets. Several other studies in the literature support a positive link between international experience and price standardization (e.g. Zou and Cavusgil 2002). International experience also plays an important role in understanding the impact of psychic distance. Psychic distance refers to the individual's perception of the differences between markets and as such it is not stable over time but is rather dynamic in nature. Consequently, as psychic distance increases, price adaptation should increase, but this increase should be lower for managers with international experience, because they are less willing to adapt their pricing strategies. We expect, therefore, that managers' international experience may attenuate the positive impact that psychic distance has on price adaptation. Accordingly, we predict the following:

*H7: The positive relationship between psychic distance and price adaptation is attenuated by the manager's international experience*

Studies have shown that a firm can improve its export performance by adapting its marketing strategy to the characteristics of the foreign market (Cavusgil and Zou 1994; Katsikeas, Samiee, and Theodosiou 2006). As a result, price adaptation is expected to have a positive influence on the firm's export performance. The rationale underlying this argument is that

firms that follow a price adaptation strategy are able to respond to changing market conditions and are in a better position to adjust to local competitive conditions, thereby enhancing the likelihood of success (Christensen, da Rocha, and Gertner 1987; Lee and Griffith 2004). Thus, the following hypothesis is proposed:

*H8: The degree of price adaptation is positively related to the export performance of the firm*

### **Quadratic effect**

The concern with H8 is that it implies that export performance will always increase with greater degrees of price adaptation. A recent review of the literature shows the results regarding the impact of price adaptation/standardization on export performance to be inconsistent and often contradictory (Tan and Sousa 2011). A possible explanation is that the relationship between adaptation and export performance is non-linear (Özsomer and Simonin 2004). A similar view is also advanced by Dow (2006) who suggests that the conflicting empirical findings in the literature may be due to the fact that the relationship between adaptation and export performance is an inverted U shape rather than linear. According to the author, there appears to be an optimum point of marketing strategy adaptation in order to maximize firms export performance. If firms deviate from this optimum amount of adaptation the performance will decline. Accordingly, we propose an alternative hypothesis that suggests that the relationship between price adaptation and export performance is curvilinear (inverted U-shape) rather than linear.

The contingency perspective of international marketing supports the idea that the adaptation process of pricing strategy in international markets is a matter of degree rather than kind, and adaptation and standardization should be viewed as a bipolar continuum. Researchers have proposed that neither complete standardization nor complete adaptation of the marketing program is conceivable (e.g. Cavusgil, Zou, and Naidu 1993). The challenge facing international managers is to decide to what degree they should adapt the marketing-mix elements (Theodosiou and Katsikeas 2001). Managers, however, may miss the optimal point between adaptation/standardization since they are making decisions in uncertain environments where there is imperfect information. In international contexts, where uncertainty is present, even small adaptations will involve transaction costs. The uncertainty and transaction costs perceived by managers in international markets may compel them to adopt non-optimal adaption choices. The behavioral theory of decision making (Simon 1957) and the concept of bounded rationality provides further evidence that managers can make decisions that are not optimal. According to this theory, because of the complexity of the problems that managers encounter in international markets and the cognitive limitations that constrain the amount of information a person can process, managers tend to rely on a subset of features to make their decisions, without capturing the market's entire complexity (Shoham 1999). Additionally, when working in a foreign market with substantial uncertainty and imperfect information, there are trade-offs that cannot be easily quantified, making the optimal point difficult to be achieved (Dow 2006). Thus, over-adaptation and under-adaptation of marketing strategy are possible results of the decision making process in international markets.

The maintenance of a considerably lower level of adaptation (under-adaptation) is explained by the natural resistance to change within organizations, the “status quo” bias. Based on this perspective, managers tend to keep things as they are, avoiding considerable changes (Anderson 2003; Samuelson, and Zeckhauser 1988). This perspective is also supported by the population ecology theory of organizations that argues the existence of a set of factors that generate a “structural inertia” which leads to a natural resistance to change (Hannan, and Freeman 1977). The individual will be biased in interpreting subsequent information in favor of the status quo choice (Samuelson, and Zeckhauser 1988). This behavior is criticized by the adaptation school of thought that posits the notion that the standardization of marketing strategies in international contexts does not take in consideration the significant differences among customers from different countries. In line with this argument, international managers who do not adapt or who under-adapt the pricing strategy, could expect a detrimental impact on their firms’ performance, since customer characteristics and preferences are not met (Diamantopoulos, Schlegelmilch, and Du Preez 1995).

The curvilinear (inverted U-shape) relationship between price adaptation and export performance also indicates that beyond the optimal point, any levels of investment in price adaptation will be detrimental to export performance. Atuahene-Gima, Slater, and Olson (2005) point out that when firms concentrate too much effort in one sole strategy, other essential organizational functions may be disregarded. When too much attention is given to one component of the marketing mix the other components could receive less attention, leading to an unbalanced investment of scarce resources. This is particularly true in the case of SMEs where firms operate with limited budgets and even the most minor adaptation of the firm strategy involves costs. As a result, in order to achieve higher degrees of adaptation,

firms may need to cut investments in other strategic areas which could have a detrimental effect on the performance of the firm. Thus, we present the following alternative hypothesis:

*H9: An inverted U-shaped relationship exists between price adaptation and export performance*

## **Methodology**

### **Data Collection**

The study was conducted using a sample of export firms in Portugal, a member country of the European Union. Portugal has long depended on international trade because of the small size of its domestic market, and this has led to its firms being highly export oriented. The scope of the study was limited to a multi-industry sample of SMEs. In line with the European Union definition, we use 250 employees as the dividing line between an SME and a large firm. Data used to test the hypotheses were collected through a self-administered questionnaire sent to 800 small and medium-sized exporters in Portugal. This was followed by a reminder letter that included a reply envelope. To ensure that the most appropriate person would receive the questionnaire, each firm was contacted by telephone to identify the person responsible for the export operations and to create a more cooperative atmosphere. As a result of this effort, the effective response rate after two mail-waves was 34.1% (273 usable questionnaires). The results showed that around 52% of respondents were owners, presidents, or CEOs. The remaining 48% were export managers, marketing managers, and general managers.

The high response rate obtained provides confidence that non-response was not an issue (Weiss and Heide 1993). However, to further explore the issue of non-response bias we also tested for differences between early and late respondents. The extrapolation procedure proposed by Armstrong and Overton (1977) was based on the contention that, unlike early respondents, late respondents are more likely to be similar to non-respondents. According to Weiss and Heide (1993), early responses were defined as the first 75% of returned questionnaires. The last 25% were considered late responses and representative of firms that did not respond to the survey. A *t*-test was used to compare early and late respondents on all the variables but no significant differences were found (at the conventional 0.05 level). Based on these results and considering that the response rate was relatively high, it was concluded that non-response bias did not appear to be a significant problem in this study.

## Measures

With the exception of export performance, all constructs present in the model were measured using reflective indicators. The items used to measure each construct were developed on the basis of existing literature. To measure cultural distance we used a method developed by Kogut and Singh (1988) based on Hofstede's (1980) cultural indices. This index has been widely used in the international marketing and business literature (e.g. Ojala and Tyrvainen 2007; Cuypers and Martin 2010). Psychic distance was measured using the scale provided by Sousa and Bradley (2006).

We measured conservation values with the Schwartz Value Survey (SVS), which comprises 57 items. Schwartz and colleagues (Schwartz 1992) developed and extensively tested the

SVS, and its reliability and validity have been demonstrated in numerous works (e.g., Schwartz 2006). This study adopts a Portuguese version of the SVS previously validated by Schwartz and colleagues, and we employ their instructions and scoring procedure. To obtain scores for each value type in the conservation dimension, the mean score for each participant was obtained for the conformity, tradition, and security value types. Feather (1995) and Steenkamp, Hofstede, and Wedel (1999) also used this method to calculate their scores.

In relation to price adaptation, we adopted the measures developed by Lages, Jap, and Griffith (2008) and Sousa and Bradley (2009). Export assistance was measured by asking respondents to indicate the level of support and assistance provided by trade associations, the European Union, and the government (Lages and Montgomery 2005; Sousa and Bradley 2009). The international experience of the manager was measured by asking respondents to indicate their level of professional exporting experience (Lages, Jap, and Griffith 2008).

We measured export performance using a combination of formative and reflective indicators. The formative part was composed of two indicators: export sales volume and export sales as a percentage of total sales. The two indicators used to measure the reflective part of our construct were meeting expectations and how competitors rate the firm's export performance. We decided to use formative and reflective indicators to measure export performance since the combination of these two types of variable better explain the complexity present in international contexts (Hult, et al. 2008; Kaleka 2011).

The need to incorporate reflective indicators in this formatively measured construct is also related to the achievement of the model identification (Diamantopoulos, Riefler, and Roth 2008), which is guaranteed, for instance, by a model jointly measured by the two types of indicators (Jarvis, MacKenzie, and Podsakoff 2003). This procedure is known as a Multiple Indicators and Multiple Causes (MIMIC) model (Jöreskog and Goldberger 1975). The MIMIC model expresses a reflective measurement model where additional variables that influence the latent variables, e.g. formative indicators, are incorporated (Muthén 1989).

In addition to the variables specified in our theoretical model, we included the manager's age and education as control variables affecting psychic distance, price adaptation, and export performance.

### **Model Estimation**

We used Partial Least Squares Path Modeling (PLS-PM; (Lohmöller 1989) to test the hypothesized relationships and the final model. SmartPLS 2.0 (Gudergan, Ringle, Wende, and Will 2008) statistical software was used to estimate the model parameters. PLS-PM is usually known as “soft modeling” because of its flexibility in handling various modeling problems, e.g. small sample size, non multivariate normal data, and improper or non-convergent results. We used PLS-PM primarily due to its suitability to handle both reflective and formative measurement models. This reason is of major importance as a differentiating advantage of PLS-PM since the inclusion of this type of measure in covariance based structural equation models has been a source of identification problems (Henseler, Ringle, and Sinkovics 2009).

The export performance construct was estimated using a MIMIC model since it is measured simultaneously by formative and reflective indicators. The nonparametric bootstrap procedure (Efron and Tibshirani 1993) was used to create 400 bootstrap samples to provide the mean values and standard errors of path coefficients, and consequently the significance of a Student's t-test of structural relationships.

To test the quadratic effect included in the model we followed the Ping (1995) estimation technique proposition. The quadratic effect of price adaptation was obtained by using a single indicator created by squaring the standardized scores of this latent variable. As the powered term tends to be highly correlated with the price adaptation variables from which it was derived, we used the residual centering procedure (Little, Bovaird, and Widaman 2006) to avoid problems related to the estimate's instability of the regression coefficients.

## *Analysis*

### **Reliability and Validity**

The assessment of the model quality was conducted in two phases. In the first phase, the reliability and validity of the measurement model is assessed, and once the adequacy of the construct measurements is assured, the second step of assessing structural relationships

among constructs and the quality of the overall model is taken (Fornell and Larcker 1981; Anderson and Gerbing 1988).

The validity and reliability assessment of the measurement models (formative and reflective) was made by applying different measures for both types of measurement model, those composed of formative indicators and those composed of reflective indicators (Diamantopoulos and Winklhofer 2001). The results of the assessment measures applied are presented in Table 1.

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Insert Table 1 about here

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Regarding the adequacy of the reflective measurement model, average variance extracted (AVE) and composite reliability values were above the recommended thresholds of 0.5 and 0.7, respectively, for all latent constructs. The lowest AVE value obtained was 0.57, and all composite reliability values are higher than 0.8 which indicates that the internal consistency of each construct is high. Additionally, individual item reliability was assessed by examining the loadings of the measures. Consequently, convergent validity and reliability are verified.

To obtain discriminant validity, all constructs must share more variance with their measures than with other constructs. This can be assessed if the square root of the AVE values for each

latent construct is higher than the correlations between the construct and all other constructs (Fornell and Larcker 1981). The correlations between constructs are presented in Table 2. Diagonal values are the square root of the AVE values. The results show that each construct is unique and distinct from other constructs.

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Insert Table 2 about here

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The adequacy of the formative measurement model was assessed by analyzing the significance of the weight estimates and by testing multicollinearity of formative indicators through the Variance Inflation Factor (VIF) (Diamantopoulos, Riefler, and Roth 2008; Henseler, Ringle, and Sinkovics 2009). The VIF values (maximum VIF value was 1.51) of the two formative indicators were much lower than the threshold value of 10 suggested by the literature (Diamantopoulos, Riefler, and Roth 2008). Additionally, the two formative indicators weight estimates were significant. Export sales as a percentage of total sales presented a weight of 0.36, whereas degree of satisfaction with export sales volume presented a weight of 0.74. Therefore, the validity of the formative-formed construct is verified.

### **Results of the Structural Model**

The structural model was assessed by analyzing the coefficient of determination ( $R^2$ ) of the endogenous constructs export performance, price adaptation, and psychic distance (Henseler, Ringle, and Sinkovics 2009). The  $R^2$  values are displayed in Figure 2. The  $R^2$  value of 0.50 for the variable *export performance* means that 50% of variance of this construct is explained

by the other constructs in the model. The other two endogenous latent variables (psychic distance and price adaptation) presented  $R^2$  values of 34% and 27%, respectively. These three coefficients of determination obtained in our model are higher than those presented by previous research in the area (Lages, Silva, and Styles 2009; Navarro, Acedo, Robson, Ruzo, and Losada 2010), and are well above the threshold of 10% established in the literature (Falk and Miller 1992).

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Insert Figure 2 about here

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Consistent with hypothesis H1, the results indicate that cultural distance has a negative impact on the export performance of the firm as indicated by a parameter estimate of -0.094 ( $p < 0.01$ ). Similarly, as predicted by H2, cultural distance has a significant positive impact on the managers' psychic distance (0.552;  $p < 0.01$ ). Supportive findings for H3 (0.149;  $p < 0.01$ ) indicate conservation values are positively related to managers' psychic distance. Contrary to the expectations in H4, our findings suggest that export assistance is positively associated with psychic distance (0.093;  $p < 0.10$ ). The relationship between export assistance and export performance is positive (0.104;  $p < 0.01$ ), thereby providing support for H5. As expected in H6, the effect of psychic distance on price adaptation is positive (0.479;  $p < 0.01$ ). The next hypothesis (H7) predicted that the manager's international experience attenuates the positive relationship between psychic distance and price adaptation. The results support this prediction, as the coefficient for this interaction is negative and significant (-0.133;  $p < 0.10$ ). H8 specifies that the relationship between price adaptation and export performance is positive and linear. Our results suggest that this relationship is positive and significant (0.274;

$p < 0.01$ ), thus accepting H8. However, our study provides support for the alternative hypothesis (H9), since the coefficient for the quadratic term of price adaptation is negative and significant ( $-0.327$ ;  $p < 0.01$ ). This provides evidence of an inverted U-shaped relationship between price adaptation and export performance. This result means that at initial levels of price adaptation, firm performance in export markets is low. As the company moves towards a higher level of adaptation of its price strategy in international settings, export performance increases, up to a point when further adaptations will have detrimental impacts on its results. Although we have not specified in our hypotheses, we examined the effects of the manager's age and education as control variables on psychic distance, price adaptation, and export performance. The results revealed that neither the manager's age nor education were significantly related to any of the above constructs.

### ***Discussion and Implications***

Although a substantial number of studies have examined the antecedents of export performance, in comparison to other determinants little empirical attention has been paid to the importance of managers' perceptions in explaining strategic decisions and performance. Another objective of this study was to examine the non-linear effects of price adaptation on export performance. This is particularly relevant since price adaptation and export performance have been assumed in the literature to have a linear relationship. Thus, our aim is to bridge the existent gap in the literature and shed light on possible alternative relationships that might occur between price adaptation and export performance.

Regarding the first hypothesis, our results strongly support the notion that exporting to culturally-distant markets has a negative impact on the export performance of the firm. Thus, the intuitively appealing assumption that a firm performs better in culturally-close markets appears to be correct. Entering markets that are different to the home market increases risk and uncertainty due to lack of information about the foreign market, which may increase the possibility of wrong decisions, thereby reducing the firm's export performance. The results also show that cultural distance has a significant and positive impact on managers' psychic distance. This finding lends further support to those studies which argue that cultural distance is a key determinant of psychic distance (Sousa and Bradley 2006; Dow and Larimo 2009). Advice for managers, based on our results, is that in order to be more successful, SMEs should consider exporting to countries that are similar to their domestic market.

While personal values have been largely ignored in the export literature, our results indicate that conservation values have a significant and positive influence on managers' psychic distance. This suggests that managers who are more conservative are more likely to perceive greater differences between the home and foreign market. Given that values seemingly have an impact on managers' psychic distance, consideration of employee values appears to be warranted. Thus, recruiting employees based on their personal values could bring important pay-offs. To determine individuals' value orientations, firms could consider administering value scales (like the SVS used here) to potential and current employees.

Contrary to expectations, we found that the relationship between export assistance and psychic distance is positive and significant, indicating that the higher the level of export

assistance, the greater the degree of psychic distance towards the foreign market. This discloses an unexpected relationship and is contrary to H4. A possible explanation for this relationship is that the more information these export assistance programs provide about the foreign market, the more likely it is that managers are able to understand the ‘true’ distance between the markets including those subtle but important differences. This would be consistent with the view of O’Grady and Lane (1996) that learning begins with the ability to see the differences between markets. Firms with limited information about the foreign market can overestimate the similarities between their home market and the foreign market on the basis of superficial observations that are often made from a distance (Evans, Mavondo, and Bridson 2008). Managers, therefore, need to be careful that they do not underestimate the differences between the countries because of perceived closeness, which may turn out to be deceptive. Export assistance programs, by providing relevant information about the foreign market, signal to managers that larger differences exist between the home and foreign market than previously thought, thus increasing psychic distance.

As expected, export assistance also has a positive impact on the export performance of the firm. This supports H5 and is corroborated by the findings of Sousa and Bradley (2009) that export assistance can make an important contribution to the export performance of SMEs. This finding emphasizes the importance of these programs and supports a strong policy argument in their favor. While we highlight the need for such programs, the challenge for public policy makers is now to understand the firms’ requirements concerning their export activities and to meet them effectively with export assistance programs (Moini 1998).

The relationship between psychic distance and price adaptation was found to be significant and positive. This indicates that as psychic distance increases the degree of price adaptation also increases. This result shows that managerial decision making on strategic decisions depends to a large degree on managers' perceptions of the situation. Although the importance of managerial perceptions has been ignored to some extent in the export literature, it is difficult to consider strategic choices made by the firm without examining the perceptual processes of those people who are responsible for altering internal states of the firm (Anderson and Paine 1975). In an article that is now more than 30 years old, Miles, Snow, and Pfeffer (1974) already acknowledged that actions taken by the firm in responding to its environment are consistent with managerial perception rather than with the objective characteristics of the environment. Thus, to understand decisions on the degree of price adaptation we need to consider managers' psychic distance, that is, their perceptions of differences between the home and foreign market.

Regarding the above hypothesis, we also examined the moderating effect of managers' international experience on the relationship between psychic distance and price adaptation (H7). The results show that the manager's international experience attenuates the positive impact that psychic distance has on price adaptation. Consequently, the extent to which psychic distance influences pricing decisions is dependent on the manager's experience. While the degree of price adaptation depends on the manager's psychic distance towards the foreign market, this positive impact appears to be attenuated in the case of significant international experience by the manager. In this case the manager is less willing to adapt his/her pricing strategies.

The linear relationship between price adaptation and export performance postulated in H8 was positive and significant. However, the alternative hypothesis (H9) was supported, thus suggesting that the relationship between price adaptation and export performance is inverted U-shaped. This implies that there are positive returns from the adoption of a price adaptation strategy. However, beyond a certain level it becomes detrimental to export performance. This result is consistent with other studies that have suggested the existence of an inverted U-shaped relationship between marketing strategy adaptation and performance in foreign markets (Özsomer and Simonin 2004; Dow 2006). It has been shown that following a price adaptation strategy requires significant investments in market research (Porter 1980). This could be a problem since most SMEs operate with limited budgets and must prioritize their resources allocation optimally (Cadogan, Kuivalainen, and Sundqvist 2009). As such, growing degrees of price adaptation will likely come at the expense of reduced investment in other components of marketing strategy, which may have a detrimental effect on the performance of the firm. It has been shown that resources must be channeled to specific strategic components up to an optimizing point (Cadogan, Kuivalainen, and Sundqvist 2009; Atuahene-Gima, Slater, and Olson 2005). In the case of over-adaptation, any efforts to customize a particular strategic component are detrimental to a firm's performance.

In addition, there may be cognitive barriers in processing increasing amounts of market information, and the financial costs of its dissemination relative to the expected gains (Maltz and Kohli 1996). The behavioral theory of decision making (Simon 1957) and the concept of bounded rationality help us to understand why international managers may adopt suboptimal

degrees of price adaptation. Rather than making optimal choices in a clearly defined and well known environment, international managers are dealing with an unknown set of variables, where uncertainty and imperfect information are the tenets. The bounded rationality limits the decision-making process to a subset of factors, leading the manager to adopt suboptimal degrees of adaptation. Also, the “status quo bias” and the natural resistance to change (Hannan, and Freeman 1977) may cause managers to favor lower levels of strategy adaptation in foreign markets. This phenomenon may prevent international firms from reaching the optimal point of adaptation in foreign markets. Managers must, therefore, be careful to maintain an optimal degree of price adaptation that allows them to increase their export performance. When operating in export markets, the question for managers should not be a dichotomous one of whether to adapt or not to adapt, but rather a question of how much to adapt.

### ***Limitations and Directions for Future Research***

The implications drawn from our study should be tempered by certain limitations. Firstly, the survey methodology may have created common method variance (CMV), which could have inflated construct relationships. This can be particularly threatening when the respondents are aware of the conceptual framework of interest. Respondents were not told the specific purpose of the study. We also used procedural remedies to minimize the effects of common method bias (Podsakoff, MacKenzie, Lee, and Podsakoff 2003). The research instrument used in this study incorporated the following procedures: (1) we primarily employed widely used and previously validated scale items to measure both predictor and criterion variables, thereby reducing possible measurement error caused by item construction (e.g., item

ambiguity, vague concepts, complicated syntax, etc.); (2) the measurement of the predictor and criterion variables was separated in answer sequence by items for several measures unrelated to the questions in this study; (3) respondents were not aware of our conceptual model, which prevented them from providing answers based on their beliefs of how the variables should be related; (4) we used an anonymous, self-administered questionnaire to obtain our data thereby “protecting respondent anonymity and reducing evaluation apprehension” and this should “reduce people’s evaluation apprehension and make them less likely to edit their responses” (Podsakoff, MacKenzie, Lee, and Podsakoff 2003, p. 888). Hence, the possibility of introducing bias through common method variance was minimized. Nevertheless, statistical tests were conducted to determine the extent of possible method variance in the data. The Harman one-factor test (Podsakoff and Organ 1986) demonstrated that the risk of common method variance was unlikely to be significant in this case because the exploratory factor analytic results showed that a single general factor did not account for most of the variance. To confirm these results, additional analyses were performed to test for common method variance following a procedure presented by Lindell and Whitney (2001). In this approach, we used several marker variables to estimate the loadings on every item in the PLS path model, in addition to each item’s loading on its theoretical construct. A comparison of the estimated path model relationships with and without each of the additional marker variables shows no notable differences with all theorized paths maintaining their level of statistical significance. Thus, neither the traditional single-factor test nor the marker variable approach suggests a threat of common method bias.

Another limitation concerns the cross-national nature of our study, which limits our ability to establish causal relationships. Longitudinal data would have been useful to establish the

hypothesized sequence of events through time. For instance, it is expected that managers' perceptions change over time. In this case a longitudinal study would allow us to examine whether any alteration in managers' psychic distance is due to changes in the constructs under study. In this way, exploring the key factors in respect of managers' psychic distance would offer additional insights into the dynamics of causality involved in the formation of the managers' perceptions.

Examining the proposed model in cross-cultural settings would also be worthwhile to gain more insights into whether the observed effects are specific to Portuguese exporters or whether the model might also be applied to exporters in other countries. Thus, replication of this study with samples from other parts of the world would reveal its generalizability.

In terms of our operationalization of export performance, it is important to notice that this study adopted a mixed measure with formative and reflective indicators. In the export literature the reflective approach has been dominant when trying to operationalize export performance (Navarro, Acedo, Robson, Ruzo, and Losada 2010), thereby assuming that the indicators vary depending on the variations in the latent variable. However, the latent construct such as export performance is formed by indicators that may have a different nature, despite measuring the same concept. Although with little practical impact, Diamantopoulos (1999) already addressed the need to consider this issue when operationalizing export performance more than 10 years ago. We hope that our mixed approach of formative and reflective indicators to measure export performance will stimulate

more critical thinking among researchers and ultimately lead to the development and adoption of better export performance measures.

Finally, more research is needed to fully explore the issue of non-linearity between price adaptation and export performance. In this context, future studies should also consider examining non-linear relationships between the other elements of the marketing mix and export performance. We believe that further investigation of the nature of the relationship between adaptation and export performance is a promising area for future research.

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**Table 1**  
**Measurement Model**

Constructs and items	VIF	Item weights	Item loadings	AVE	CR
<b>Export Performance</b>				.67 <sup>a</sup>	.84 <sup>a</sup>
Export sales as % of total sales <sup>f</sup>	1.51	.36			
Export sales volume <sup>f</sup>	1.51	.74			
Degree of meeting expectations <sup>r</sup>			.89		
How competitors rate firm's export performance <sup>r</sup>			.82		
<b>Price adaptation</b>				.67	.89
Price discount policy			.70		
Margins			.89		
Credit concession			.83		
Pricing strategy			.83		
<b>Export assistance</b>				.67	.86
Assistance provided by trade associations			.65		
Assistance provided by the European Union			.89		
Assistance provided by the government			.89		
<b>Psychic distance</b>				.57	.90
Climatic conditions			.72		
Purchasing power of customers			.73		
Life styles			.76		
Consumer preferences			.73		
Language			.74		
Level of literacy and education			.77		
Cultural values, beliefs, attitudes and traditions			.81		
<b>Conservation values</b>				.66	.85
Conformity			.88		
Security			.94		
Tradition			.57		

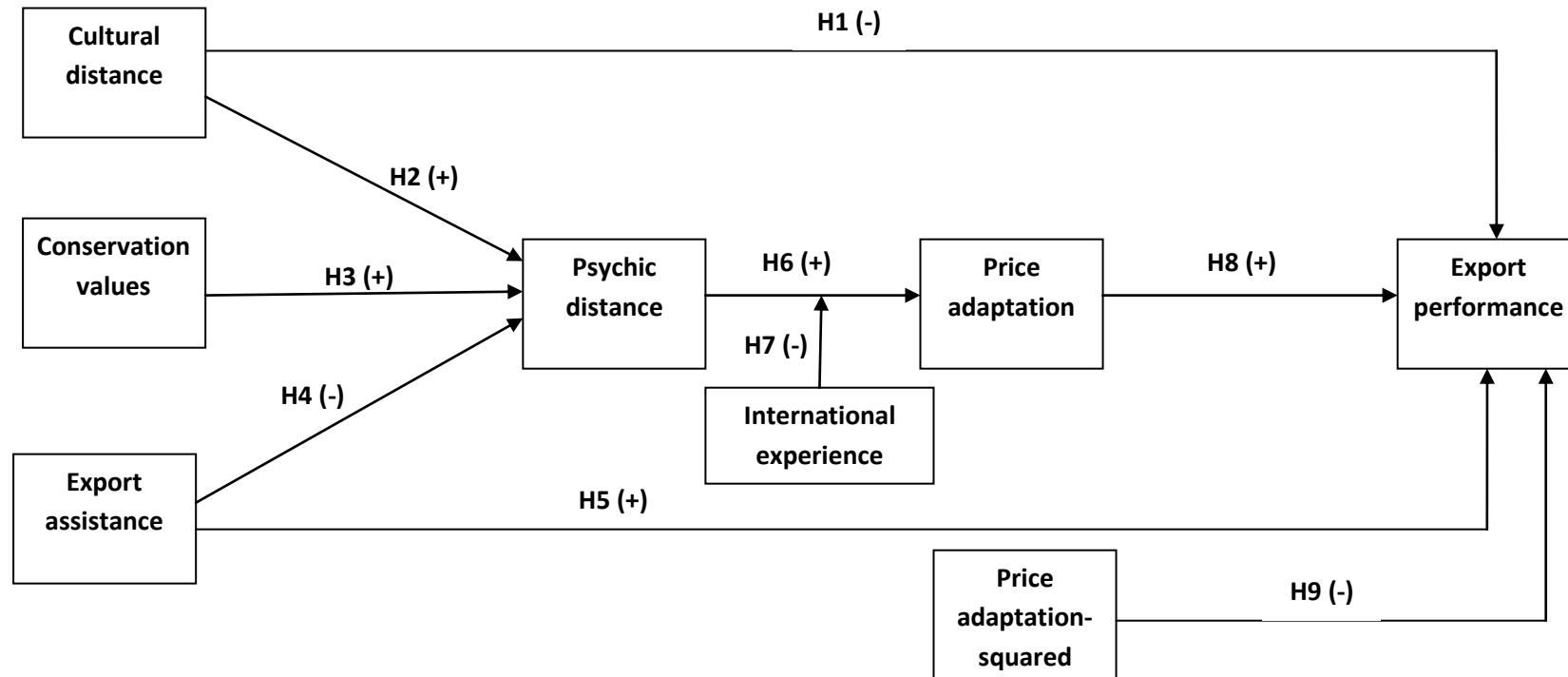
Note: AVE=average variance extracted; CR=composite reliability; f=formative; r=reflective; a=reflective part

**Table 2**  
**Correlation between Constructs**

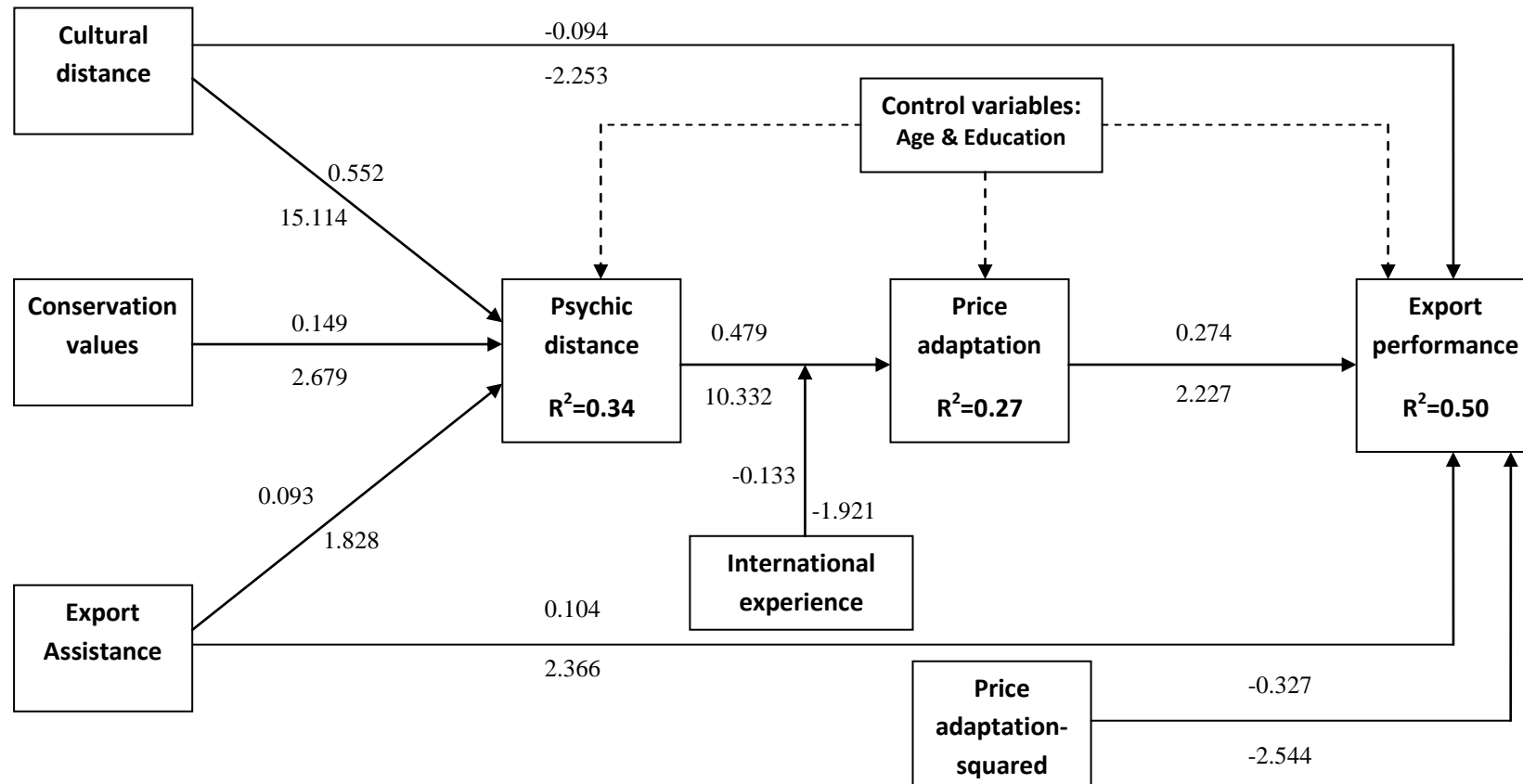
Construct	CR	1	2	3	4	5	6	7	8
1. Export Performance	0.84	<i>0.86</i>							
2. Price	0.89	-0.09	<i>0.82</i>						
3. Psychic distance	0.90	0.03	0.49	<i>0.76</i>					
4. Cultural distance	1	-0.03	0.25	0.56	<i>1</i>				
5. Export assistance	0.86	0.19	0.01	0.05	-0.06	<i>0.82</i>			
6. Conservation values	0.85	-0.02	0.15	0.18	0.05	-0.02	<i>0.81</i>		
7. Experience	1	0.18	-0.01	0.14	0.20	0.01	0.17	<i>1</i>	
8. Price Squared	1	-0.14	-0.74	0.46	0.20	-0.01	0.15	-0.02	<i>1</i>

Note: CR=composite reliability; Diagonal is the square root of the average variance extracted

**Figure 1**  
**Conceptual Model**



**Figure 2**  
**Final Model**



Note: The standardized parameter estimate is above the lines and t-values below the lines