An empirical investigation of the relationship between Temporal Orientation and Consumer Innovativeness in the case of purchase of a durable good

Tung DAO
PhD in Management Science
Teaching and Research Assistant
Marketing Department
Reims Management School
5, rue Pierre Taittinger – BP 302
51061 Reims Cedex
Tel. (+33) 3.26.77.46.69
Email: tung.dao@reims-ms.fr
Abstract:

This study provides an empirical test of the relationship between Temporal Orientation (including Past-, Present-, and Future-Orientation) and the personal hedonist dimension of Consumer Innovativeness in the case of the purchase of a durable good. The review of the literature on the concepts of Temporal Orientation and purchase Innovativeness leads to the three following hypotheses: purchase Innovativeness is positively and significantly related to Future-Orientation (H1); it is not significantly related to Past-Orientation (H2); and it is significantly and positively associated with Present-Orientation (H3). In order to test these three hypotheses, a survey was conducted on a sample of 300 French consumers in the process of purchasing an audiovisual product. The empirical results led to accept H1 and H2 regarding the relationship between Purchase Innovativeness and respectively the Future and Past-Orientation. H3 concerning a significant and positive connection between purchase Innovativeness and Present-Orientation was rejected by the empirical data. Some managerial implications of this study are discussed.

Key words: Temporal Orientation, Consumer Innovativeness, Durable Goods Purchase, French Consumers.
INTRODUCTION

Temporal orientation, among many aspects of the concept of Time, has constituted, and still constitutes, an important subject in consumer behavior research. The attraction of this concept can be explained, among others reasons, by the fact that it is often interpreted as a component of the cognitive structure of individuals (Bergadàa, 1990), that influences their attitude and behavior in many purchase situations. For example, past research has shown that consumption-related aspiration and the act of the individual are strongly affected by his temporal focus, i.e. their focus on the past, the present or the future (McGuire, 1977), and an individual’s consumption is compared with the construction of his “future identity” (Gibbs, 1998; Barndt and Johnson, 1995). Several studies have also indicated the impact of temporal orientation when purchasing various types of products, such as books, personal accommodation choice, or the choice of type of vacation (Bergadàa, 1990), the adoption of home-care services (Gibbs, 1998), or shopping behavior (Chetthamrongchai and Davies, 2000).

Concerning the relationship between this concept, temporal orientation, and the concept of “consumers’ innovativeness”, or the tendency to buy new products, some theoretical works express implicitly the presence of a connection between these two concepts. Furthermore, these assumptions have not been validated by empirical works (as) yet.

This research aims to put these theoretical assumptions to the test. More precisely, it consists in examining, with the empirical data resulting from a consumer survey, the link between, on one hand, the three dimensions of temporal orientation (past, present and future), and, on the other, consumer innovativeness in the purchase of audiovisual products.

After a brief literature review regarding Temporal orientation and Innovativeness concepts, we will formulate our research hypotheses about the link between these two variables, and will present the results of our empirical study to test these hypotheses. Some discussions and managerial implications from this research will be developed at the end of the article.

LITERATURE REVIEW

Temporal orientation
According to Agarwal and Tripathi’s definition (Agarwal and Tripathi, 1980), cited in Bergadàa (1989), “the temporal orientation of an individual is defined as his preference or predisposition to visualize one of three zones of time; an individual can be “qualified” as “past oriented”, “present oriented” or “future oriented” depending on the relative weight he will give to the events located in one or other temporal zone”.

In a more detailed way, Lin (1994) defines temporal orientation as the tendency of a person to go towards, and/or to attach the importance to, and/or to use, in a durable way, and as a reference framework, a particular zone of time, while he has capacities to consider his time-related experiences beyond the current events and to infer causal relations between various sequential temporal experiences. This author distinguishes also, with this definition, five essential aspects of temporal orientation: *envisageability* (to anticipate the influence factors and the consequences of the events), *sequentiality/causality* (to consider sequential and causal relations of things in time), *preoccupational dimension* (usual concerns of the individual towards one of three temporal zones), *preferential dimension* (to attach importance or to express an optimistic view point to one of three temporal zones), and *referential dimension* (to take the temporal zones, like the past, the present and the future, for an action reference framework).

Lin has grouped the last three aspects of this definition (*preoccupational, preferential, and referential*) as a “motivational dimension” of the concept of temporal orientation, and the two first aspects as a “cognitive dimension” of this concept. The “motivational dimension”, according to this grouping, could be compared to the above definition of temporal orientation of Agarwal and Tripathi (1980).

For some researchers, the individual seems to be situated in only one of these three periods of time. For example, Bergadàa (1989), in analysing the work of Agarwal and Tripathi (1980), supposed that an individual tends to identify himself in only one of the three zones: past, present or future. Nevertheless, in one of her empirical works (Bergadàa, 1990), she realized that some individuals seem to be focused on two of three temporal zones.

The presence of a temporal vision in human actions can be explained by the fact that a human being is dynamic and rational, often considering the whole of events related to three temporal zones (the past serving experiences, the present serving immediate environments, and the future as goals or anticipated consequences) when making decisions, and often
privileging the elements situated in its preferred temporal zone(s), i.e. temporal orientation. The analysis of Fraisse (1967) can testify to this observation: “our action at every moment does not only depend on the immediate environments in which we are, but also on all things we have lived and all our personal anticipations of the future. We always implicitly, sometimes explicitly, take account of theses for our acts. In other words, we can say that our every act fits in a temporal perspective, i.e. it depends on our temporal horizon, at the moment when we take it” (p. 59).

The literature has identified several antecedents of temporal orientation, such as personal factors (age, sex, education, etc.), socio-cultural factors, economic factors, etc. A detail development of theses factors can be found by consulting the work of Dao (2005).

We will now examine the principal characteristics of each of the three dimensions of temporal orientation: future-, present- and past-orientation.

Future-orientation refers to an individual’s tendency to consider future events, i.e. those which will occur in the future, rather than past or present events. These future events have more value in the cognition and action of the individual, in comparison to what occurred (past events) or what occurs at the present time (present events). Lens and Gaily (1980) consider future-orientation to be the underlying structure of the individual. This structure gives an individual the ability to define his goals, as well as the motivation and the means to carry them out. Stronger is the future-orientation of an individual, greater will be the impact of future events on his present behaviour. Moreover, he (can) take more precautions with regard to these future events (Gjesme, 1981). Bergadàa (1989) qualifies these characteristics like the motivational and structural dimensions of future-orientation.

Concerning the behavioral model of future-orientation, Bergadàa (1990) mentions that “it is characterized by motivation to develop oneself; the origin of this motivation is situated in the future; the principal attitude of these individuals is that of “action”; they try to maintain an attitude of opened-mindedness toward the environment; they search actively for opportunities to develop themselves; the plans made by these individuals are abstract ones; these plans are characterized as follows: individuals know what they want to become, and the objective of these plans is essentially vague” (p. 296). The future oriented individual often takes account of the consequences of present actions on the future (Davies and Madran, 1997). In the same way, Settle and al. (1978) show that the individual adopting this temporal
orientation prefers to think of the future, to be identified in this temporal horizon, and to live for what will arrive. The future oriented individual also tends to take control of things in order to ameliorate their lives (Davies, 1993). Future oriented individuals seem to forget their present because most of the things they do are aimed at building their future (Lens, 1993). They have a positive attitude towards the future (Parrot, 1973), and a high tolerance level of risk taking or of uncertainty (Zaleski, 1997). These individuals pay a lot of attention to the future consequences of their acts, and very often imagine virtual scenarios of their future (Zimbardo, 1994).

According to the Agarwal and Tripathi’s (1980) definition of temporal orientation, past-orientation is interpreted as a habit (or a tendency) to think of past events. Past-orientation is largely known in the literature by the term “nostalgia”.

Holbrook (1993) defines nostalgia as the individual’s temporal orientation, which comes from past-related products (or objects) to which one is exposed. More precisely, it refers to a preference (“to like”, positive attitude, or favourable affection) towards objects (people, places, or things) which were so familiar (popular, “in fashion”, or so known) when someone was younger (Holbrook and Schindler, 1991).

Many researchers, for example Hirsch (1992), postulate that an individual tends to “idealize” his past by filtering the negative aspects and keeping the positive aspects. With this viewpoint, the present, whatever its reality (beautiful or not), is often, or almost, less beautiful than the “idealized past”, and when individuals cannot return to their past, the feeling of nostalgia is natural.

A strong consciousness of tradition, a habit to review past events, a low level of dynamism and an emotional mentality are fundamental characteristics of this temporal orientation (Davies and Madran, 1997; Chetthamrongchai and Davies, 2000). Another particularity of past-oriented individuals is that they tend to reproduce in the future some “idealized” past scenarios, whatever their reality, because this generally generates a feeling of familiarity or safety in view of an uncertain future. For example, Hirsch (1992) shows that some individuals tend to marry the person having similar characteristics to their close relative (for example their parents). According to this author, some behaviour models that were applied in the past seem to be reproduced in the present by nostalgic individuals.

In reference to Agarwal and Tripathi’s (1980) definition of temporal orientation, we can define the present-orientation as a preference or a predisposition to visualize (or consider) events that are situated in the present.
Urien (1998) shows that “some individuals can be completely absorbed in the present; the past and future have no place in their psychological world. These people did not learn anything from their past experiences, and they do not take account of the future consequences of their present acts. They live in the present moments and things” (p. 106).

Brodowsky and Anderson (2000) and Jump and Feather (1988) reveal that the present-orientation is characterized by the lack of consideration of past and future-situated events. In other words, present oriented individuals tend to attach a greater importance to what happens in the present, and not to what that happened or will happen.

Similarly, Bergadàa (1990) qualifies the present-orientation as “the individual’s motivation to improve the well-being of the present life”.

Some specific behaviours of this temporal orientation were identified in the literature.

Bergadàa (1990) found that « it is characterized by motivation to improve the present well-being of the individual; the origin of this motivation is situated in the present; the principal attitude of these individuals is that of “reaction”; they wait for the external stimulus (or events) to occur before they react; Sometimes, they resist change or refuse to consider it; the individuals do not have any plans or make concrete plans; these plans have two characteristics: individuals know what they want to do, and the object is essentially precise”(p. 269).

Davies and Madran (1997) show that the present oriented individual does not have the habit of planning activities to do in a day (or week, month) as does the future oriented individual. This temporal orientation is not dominated by the values or constraints of the tradition like the past-orientation, but it is rather focused on “here and now”. In contrast to the future-orientation, present oriented individuals search for simplifying their life and for being dependant on others. In other words, they have a weaker control of things than the future oriented individuals (Davies, 1993).

The present-orientation also seems related to the following specific characteristics: impulsive, hedonist, risk-taking, and easily influenced by affection (Zimbardo, 1994).

**Innovativeness**

Innovativeness is defined, in general, as “the person’s sensitivity to new ideas”(Midgley and Dowling, 1978), or “the degree to which the individuals make decisions regarding innovations independently of the communicated experience of others”(Blyth, 1999, p. 420).
Individuals with a high degree of innovativeness (innovative individuals) are those with the highest propensity to adopt new products (Midgley and Dowling, 1978; Foxall, 1988; Hirschman, 1980).

Hirschman (1980) suggested novelty seeking as another variable that influences the adoption of new products, and found that this concept is close to the concept of innovativeness.

Two important reasons for this attitude (innovativeness) were found in the literature: the “need for stimulation” (Venkatesan, 1973; Hirschman, 1980), related to the individual’s degree of sensibility to what is unknown, ambiguous, new, etc. (Berlyne, 1960), and the “need for uniqueness” (Fromkin, 1971; Snyder and Fromkin, 1980), related to individual’s seeking to be different from the others while remaining integrated socially. With these observations, Roehrich (1994) proposes to consider innovativeness with its two dimensions: a personal hedonistic dimension, related to the need for stimulation, and a social dimension, concerning the need for uniqueness.

Two points of view can be seen in the literature concerning the concept of innovativeness: “general innovativeness” (or “innate innovativeness”) (Midgley and Dowling, 1978; Mudd, 1990; Roehrich, 1994) and “product category-related innovativeness” (Goldsmith and Hofacker, 1991).

The first one, general innovativeness, is viewed as a consumer’s cognitive style, or a personality-like construct, and independent to product type. According to Midgley and Dowling (1978), general innovativeness constitutes one of two important causes determining innovative behavior (and the second is product category-related interest).

Even if this viewpoint is well supported by the theory, it often receives criticism about its measurement. For example, Goldsmith and Hofacker (1991) indicate clearly that it is difficult to talk about the general innovativeness in an experiment context where some product categories are presented to the consumers. Continuing this reasoning, it seems inevitable that even if there is not any product that is mentioned in the experimental plan, a source of error, which is related to the difficulty to answer the questionnaire by consumers, could occur during the measurement process.

Specific innovativeness, or the “product category-related innovativeness”, is defined in the same manner, i.e. “the intention to trying new things” (Goldsmith and Hofacker, 1991), but it is related to, or dependant on, product category. In other words, the innovativeness concept by this approach necessarily concerns a specific category of product, and the idea of general innovativeness is not validated. Although this viewpoint is adopted by many authors
(ex. Jung and Kim, 2005; Goldsmith, D’Hauteville and Flynn, 1998; Blyth, 1999), the measurement of specific innovativeness should be done with great precaution. Roehrich (1994) criticizes this approach by the fact that the measurement of the product category-related innovativeness contains as much information on “the interest with regard to the product category” as on “the attraction with regard to the new products”(innovativeness).

In the present article, we focus on the concept of “specific innovativeness” that is related to the purchase of the audiovisual products.

**Temporal orientation and innovativeness: formulation of research hypotheses**

Settler et al. (1978) characterized the future-oriented individuals as “innovators”, “opinion leaders” and “adventurous”. We formulate thus Hypothesis 1 as:

H1: **The more a consumer is future-oriented, higher is his innovativeness in the purchase of audiovisual products**

Concerning the past-oriented individuals, Settler et al. (1978) indicate that they are characterized by the following characteristics: “careful consumers”, “opinion followers” and “conservatives”. These characteristics consequently seem not to encourage the consumers’ innovativeness in this purchase situation. Nevertheless, since the innovation process in the manufacture of this type of products is necessary and it brings new values (evolution of technology, improvement of quality, etc.), it can not be reasonable to say that a greater past-orientation limits the consumer’s innovativeness.

These analyses lead to Hypothesis 2 as follow:

H2: **Past-orientation is not significantly related to innovativeness in the purchase of audiovisual products**

Zimbardo (1994) observes that present-orientation seems also related to the following characteristics: impulsive, hedonistic, risk-taking, and easily influenced by affection. So, we formulate Hypothesis 3 as follow:

H3: **The more the individual is present-oriented, greater will be his innovativeness in the purchase of audiovisual products.**
EMPIRICAL STUDY

Variables measurement

In order to measure the three dimensions of temporal orientation (past, present and future), we used the Usunier and Valette-Florence (1994) scale, for measuring the past and future-orientation, and that developed by Gentry et al. (1993) for measuring the present-orientation. This second scale, of American origin, was adapted to, and validated with, the French consumers by Urien (1998). A new item that measures the past-orientation has been added.

Roehrich’s (1994) innovativeness scale was used to measure consumer innovativeness in the purchase of audiovisual products. Only the personal hedonist dimension of this scale, that interests us, was utilized. This scale dimension contains 5 items. The items of the social dimension of this scale, that relates the uniqueness dimension of innovativeness concept, were not retained.

Each item in the questionnaire was evaluated with a Likert attitude scale of 6 points, from 1 (Do not agree at all) to 6 (Absolutely agree). The contents of the employed items for measuring studied variables and their sources are provided in table 1 (in appendix).

Study sample

A survey by questionnaires was conducted to a sample of about 350 French consumers. The final sample was composed of 300 valid answers. The consumers in the final sample were between 22 and 70 years old, and they come from different socio-professional backgrounds. The final sample constitutes the empirical database for validating our three research hypotheses.

Empirical results and validation of the research hypotheses

To validate the three research hypotheses previously formulated, we employed the SEM (Structural Equations Modeling) to test a theoretical model of structural relations between these variables. In this relation model, the three dimensions of temporal orientation form independent variables, and innovativeness represents the dependent variable. The construction of this model was based on the theoretical developments of Bergadàa (1990)
regarding the theoretical assumptions of the temporal orientation concept. According to these analyses, the individual’s temporal orientation seems to be built very early and throughout the individual’s development process. It forms the cognitive structure of the individual. We suppose thus that temporal orientation represents antecedents of consumer innovativeness.

The CFA (Confirmatory Factor Analysis) was used to validate the measure models of studied variables (concepts). Some items of the initial measure models were removed to improve the measure quality. The results of the validation of measure models (see table 2, in appendix) show that the purified models present good psychometric validity (convergent validity, discriminate validity, and measure reliability).

The test of the relation model by SEM (see Model 1, in appendix) indicates a good level of model adjustment to empirical data: Chi-square (CMIN) = 204,662, p = 0,000, DF = 98, CMIN/DF = 2,088, GFI = 0,922, AGFI = 0,891, standardized RMR = 0,06, RMSEA = 0,057.

The results of the structural model test show that: (1) future-orientation is positively and significantly correlated to the innovativeness at a significant level $p < 0,05$. Thus, hypothesis H1 is validated; (2) the past-orientation is not significantly correlated to the innovativeness at a significant level $p < 0,05$. Hypothesis H2 is validated; (3) the connection between present-orientation and innovativeness is not significant, at $p < 0,05$. Thus, hypothesis H3 is rejected.

CONCLUSIONS

Discussion of the empirical results

According to the empirical results, only future-orientation is significantly correlated, and with a positive sense, to innovativeness in the purchase of audiovisual products. It means that more the individual is future-oriented, more he is innovative in his purchase of audiovisual products. The correlation between the present- and past-orientation and the innovativeness are not significant. It means that these two dimensions of temporal orientation do not permit explaining or predicting the consumer innovativeness in the purchase of this product category.

The $R^2$ value of 0,06 (see the Schema 1, in appendix) means a very weak capacity of the three dimensions of temporal orientation (i.e., independent variables) to explain the variation of innovativeness (dependent variable). In other words, only 6% of the information
of consumer innovativeness can be explained by temporal orientation (past-, present- and future-orientation).

The empirical results of this research seem consistent to theoretical predictions regarding the temporal orientation concept, except the relation between present-orientation and innovativeness (hypothesis H2). The rejection of this hypothesis can be explained, among other reasons, by the argument that the purchase of audio-visual products presents a high implication level on consumers, and thus a high level of perceived risk. This implies that the present-oriented consumers, who are characterized by “reaction”, could not systematically have a higher degree of innovativeness than those with a lower present-orientation.

Managerial implications

In light of these results, one application could be for the development of communication and marketing strategies for the commercialization or manufacturing of audiovisual products. The manufacturers or distributors should focus on consumers with a strong future-orientation, because these ones manifest a high degree of innovativeness adopt new models with a short time after launch.

To implement this strategy, it would be necessary to also call upon traditional segmentation criteria (age, professional situation, education level, and financial resources) to help identify these consumers and to reach them, because it is often difficult and expensive to target a group of consumers solely by a psychological criterion like temporal orientation.

It is necessary to recall that this variable, future-orientation, explains weakly the innovativeness of the consumers in the purchase of this product type (6%). Thus, it cannot be taken into account separately as a main criterion, but rather an additional one, in the segmentation and targeting process.

Limits of this research and directions for future research

Some important limits to specify:

In this research, we’ve employed without adaptation Roehrich’s (1994) scale, that was developed to measure the general innovativeness, in measuring the audiovisual purchase-related innovativeness; i.e. product category-related innovativeness. This practice could be a source of error in the measuring of consumer innovativeness. Future research can thus develop a new scale to measure innovativeness for this product category or adapt the Goldsmith and Hofaker’s (1991) scale to the French context to treat our research issues. The
Goldsmith and Hofaker’s (1991) scale was developed in an Anglosaxon context to measure specific innovativeness.

Only the hedonistic dimension of innovativeness was taken into account in this study. The empirical results can not permit knowing whether the social dimension of the innovativeness concept (the need for uniqueness) has an influence on the consumer innovativeness for the purchase of these products. This question seems interesting to explore for the future research.

Finally, further studies could test these hypotheses in new purchase situations (ex. frequently consumed products, others durable products, etc.) to examine the impact of temporal orientation on consumer innovativeness.
### Initial Measure Items

#### Innovativeness

<table>
<thead>
<tr>
<th>Description</th>
<th>Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchasing new products interests me more than known products</td>
<td>ANO01</td>
</tr>
<tr>
<td>New products excite me</td>
<td>ANO02</td>
</tr>
<tr>
<td>I think that new products are better</td>
<td>ANO03</td>
</tr>
<tr>
<td>I’d like to test and try the newest products</td>
<td>ANO04</td>
</tr>
<tr>
<td>I think that we must purchase new products that have just been launched</td>
<td>ANO05</td>
</tr>
</tbody>
</table>

#### Future-Orientation *(Usunier and Valette-Florence, 1994)*

<table>
<thead>
<tr>
<th>Description</th>
<th>Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Many of us tend to daydream about their future. It also happens to me</td>
<td>TFU01</td>
</tr>
<tr>
<td>I often think about the things I am going to do in the future</td>
<td>TFU02</td>
</tr>
<tr>
<td>I think a lot about what my life will be some day</td>
<td>TFU03</td>
</tr>
<tr>
<td>I spend time thinking about what my future may be like</td>
<td>TFU04</td>
</tr>
</tbody>
</table>

#### Past-Orientation *(Usunier and Valette-Florence, 1994)*

<table>
<thead>
<tr>
<th>Description</th>
<th>Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel nostalgia for the past</td>
<td>TPA01</td>
</tr>
<tr>
<td>When I am by myself, my thoughts often drift back to the past</td>
<td>TPA02</td>
</tr>
<tr>
<td>I sometimes find myself dwelling in the past</td>
<td>TPA03</td>
</tr>
<tr>
<td>I think quite often about my life as it used to be</td>
<td>TPA04</td>
</tr>
<tr>
<td>I like to relive the past moments that I experienced(*)</td>
<td>TPA05</td>
</tr>
</tbody>
</table>

#### Present-Orientation *(Gentry et al., 1993, adapted short version by Urien, 1998)*

<table>
<thead>
<tr>
<th>Description</th>
<th>Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>We should concentrate on today, tomorrow will take care of itself</td>
<td>TPR01</td>
</tr>
<tr>
<td>Live for today</td>
<td>TPR02</td>
</tr>
<tr>
<td>Worrying about what might happen is foolish</td>
<td>TPR03</td>
</tr>
<tr>
<td>I concentrate on what I am doing now; the future will take care of itself</td>
<td>TPR04</td>
</tr>
<tr>
<td>It is best to give the most attention to what is happening now in the present</td>
<td>TPR05</td>
</tr>
<tr>
<td>Living in the present wholeheartedly is more important than anticipating what the future would be like</td>
<td>TPR06</td>
</tr>
<tr>
<td>I only take interest in those things that pertain to my life today</td>
<td>TPR07</td>
</tr>
<tr>
<td>One should enjoy life when young, because it becomes difficult to enjoy when old</td>
<td>TPR08</td>
</tr>
<tr>
<td>I think little of the future and the past. I live for the present</td>
<td>TPR09</td>
</tr>
</tbody>
</table>

*This item has been added*
Appendix 2: The purified scales

<table>
<thead>
<tr>
<th>Scale Items</th>
<th>Loading (CFA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovativeness</td>
<td></td>
</tr>
<tr>
<td>Model fit: (Chi-square (CMIN) = 3,721, DF = 2, CMIN/DF = 1,861, GFI = 0,994, AGFI = 0,969, standardized RMR = 0,019, RMSEA = 0,054, NFI = 0,988, CFI = 0,995)</td>
<td></td>
</tr>
<tr>
<td>Convergent validity: $\rho_{vc} = 0,48; \rho_{\xi} = 0,79$</td>
<td></td>
</tr>
<tr>
<td>AN001</td>
<td>0,69</td>
</tr>
<tr>
<td>AN002</td>
<td>0,71</td>
</tr>
<tr>
<td>AN004</td>
<td>0,72</td>
</tr>
<tr>
<td>AN005</td>
<td>0,65</td>
</tr>
<tr>
<td>Temporal orientation</td>
<td></td>
</tr>
<tr>
<td>Global model fit: (Chi-square (CMIN) = 127,681, p = 0,000, DF = 51, CMIN/DF = 2,504, GFI = 0,934, AGFI = 0,899, standardized RMR = 0,06, RMSEA = 0,071, NFI = 0,892, CFI = 0,931)</td>
<td></td>
</tr>
<tr>
<td>Future-Orientation ($\rho_{vc} = 0,52 ; \text{max (} r^2 \text{)} = 0,13 &lt; 0,52 \rightarrow \text{good discriminate validity}; \rho_{\xi} = 0,72$)</td>
<td></td>
</tr>
<tr>
<td>TFU01</td>
<td>0,57</td>
</tr>
<tr>
<td>TFU02</td>
<td>0,67</td>
</tr>
<tr>
<td>TFU03</td>
<td>0,80</td>
</tr>
<tr>
<td>Past-Orientation ($\rho_{vc} = 0,47 ; \text{max (} r^2 \text{)} = 0,13 &lt; 0,47 \rightarrow \text{good discriminate validity}; \rho_{\xi} = 0,84$)</td>
<td></td>
</tr>
<tr>
<td>TPA01</td>
<td>0,71</td>
</tr>
<tr>
<td>TPA02</td>
<td>0,71</td>
</tr>
<tr>
<td>TPA03</td>
<td>0,72</td>
</tr>
<tr>
<td>TPA04</td>
<td>0,85</td>
</tr>
<tr>
<td>TPA05</td>
<td>0,58</td>
</tr>
<tr>
<td>Present-Orientation ($\rho_{vc} = 0,47 ; \text{max (} r^2 \text{)} = 0,09 &lt; 0,47 \rightarrow \text{good discriminate validity}; \rho_{\xi} = 0,77$)</td>
<td></td>
</tr>
<tr>
<td>TPR02</td>
<td>0,50</td>
</tr>
<tr>
<td>TPR04</td>
<td>0,61</td>
</tr>
<tr>
<td>TPR05</td>
<td>0,87</td>
</tr>
<tr>
<td>TPR06</td>
<td>0,71</td>
</tr>
</tbody>
</table>

Model 1: The model of relationship between the three dimensions of temporal orientation and innovativeness

![Diagram](attachment://diagram.png)

Model fit: (Chi-square (CMIN) = 204,662, p = 0,000, DF = 98, CMIN/DF = 2,088, GFI = 0,922, AGFI = 0,891, standardized RMR = 0,06, RMSEA = 0,057, NFI = 0,871, CFI = 0,927).
REFERENCES


Parrot G.L. (1973) Factors structure of the FTP inventory, Memeographed Report, Sacramento, California, State University.


