

ABSTRACT

SHETYE, TARA. Differences in Attitudes Towards Time at Work: Validation of the Time Preferences at Work Scale. (Under the direction of Frank J. Smith.)

The purpose of this research was to develop an instrument to measure differences in workers' preferences related to the passage of time at work. Previous research indicates that this construct may have implications for the effectiveness of work teams, as well as other work outcomes such as person-organization fit. However, current methods of measuring time preferences are incomplete. Using a ten-factor theoretical framework introduced by Brislin and Kim (2003), a comprehensive instrument was designed and validated. In the first step of the validation, content validity evidence and item quality were assessed, demonstrating that the items were of acceptable quality and content-appropriate. Construct validity was then assessed. Undergraduate students ($N = 601$) responded to the 186-item questionnaire, as well as a variety of personality and background items. Analyses were conducted in three stages. In the first stage, an exploratory factor analysis revealed a six-factor structure to the items. The second stage of analysis used confirmatory factor analysis to test this structure. Finally, convergent and discriminant validity were assessed. Overall, the findings suggest that this scale is psychometrically sound and suitable for use in organizations.

DIFFERENCES IN ATTITUDES TOWARDS TIME AT WORK:
VALIDATION OF THE TIME PREFERENCES AT WORK SCALE

by
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BIOGRAPHY

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Ms. Shetye was recently married to Daniel J. Behrend, a Teach for America Corps member and 6th grade teacher in Vance County, NC.

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Differences in Attitudes Towards Time at Work:

Validation of the Time Preferences at Work Scale

American workers are increasingly being expected to engage in interpersonal interactions with individuals from cultures other than their own. The U.S. Department of Labor predicts that between 1998 and 2008, the U.S. labor force will experience a 40% increase in Asian workers, and a 37% growth in Hispanic workers (U.S. Bureau of Labor Statistics, 2005). Brislin and Cushner (1996) offer several reasons for this phenomenon, including developments in the global marketplace, increases in international tourism, affirmative action policies, and the movements of international students and workers. Technology has also contributed, enabling instant communication with people anywhere on earth. While internationalization has many benefits, cross-cultural interactions can also result in miscommunications, misunderstandings, and frustrations, which hinder work processes (van der Zee, Atsma, & Brodbeck, 2004). The increasing number of workers who find themselves in a “foreign” environment has led to a large effort by industrial and organizational psychologists to alleviate their discomfort and aid in cross-cultural adjustment, both to improve productivity and to increase employee well-being. The success of any such program, however, depends on a thorough understanding of cultural assumptions and differences.

“Cultural Diversity” training has become a lucrative business, with companies such as HR Press offering an extensive catalog of products and seminars related to cultural diversity skills (HR Press, 2005). Typically, an organization will sponsor such training for select employees only, to improve communication skills and reduce conflict before the employee is required to interact with members of a different culture. However, the nature of the

workforce now is such that many employees in large organizations will be expected to have cross-cultural interactions. If training can be improved and enhanced, organizations will be able to offer training to a wider range of employees.

The aspects of culture that are responsible for miscommunication and conflict have gone largely unstudied. Existing training programs appear to be based primarily on a collection of anecdotes, and attempts to describe cultural phenomena appear too general to be useful. As multicultural interactions among workers are increasing in frequency, creating effective training is becoming vital. To do so, we must first understand the ways in which culture affects workers. Triandis (2003) notes that humans can be diverse on any attribute - including social class, race, national heritage, age, lifestyle, religion, or even political affiliation. It can be said that these characteristics define groups that have a distinct cultures. With this definition, it is easy to see that the workforce is culturally diverse, whether the organization in question is a large multinational conglomerate or a local drugstore. Any organization will be comprised of workers with different values and assumptions, and therefore, any organization can benefit from a greater understanding of the way that culture influences workers. Training opportunities can no longer be exclusive to executives traveling abroad, or those facilitating multinational mergers. Rather, we must understand cultural differences to include age, place of birth, socio-economic status (SES), ethnicity, and religion.

Culture training for a general audience is typically approached in four stages: awareness, knowledge, attitudes, and skills. At the first stage, the trainer is to point out the ways in which the trainee may be making assumptions or accidentally creating a hostile environment for someone with different cultural values. This model assumes that the trainer

has the ability to know and understand all aspects of culture that may be present in the organization. Often, cultural differences become confused with differences in nationality, with trainers simply teaching trainees that Japanese people do things a certain way, while Americans do things another way. A sample piece of advice from a well-respected training curriculum states, “when dealing with Germans, practice conducting intense discussion... voices may become emotional!” (Brislin & Yoshida, 1994, p. 106). In reality, cultural differences are far more complex. This information does little except provide us with labels for people.

No training program can ever encompass all the ways in which people differ culturally. Moreover, organizations are often hesitant to devote the weeks it would require to train employees on these skills. Therefore, it is essential to develop a more targeted training approach; one that focuses on the aspects of culture that contribute most to miscommunications in the workplace.

The goals for cultural diversity training should then be: (1) acknowledge cultural differences that are not the result of national origin, (2) realize that cultural skills are needed for all workers, not just sojourning executives, and (3) target the cultural skills that make the largest impact on day-to-day communication. To accomplish these goals, a more complete understanding of cultural processes at work is needed. This is problematic, especially considering that most people belong to number of cultural categories (Polzer, Milton, & Swann, 2002). Currently, we are not able to predict what a person’s values will be like if he or she were born in rural India, educated at a private British school, married to an American, and employed at IBM for 20 years as a manager. To reach greater understanding of cultural differences at work, a psychometrically valid instrument is needed with which to measure

these differences at an individual level. The purpose of this study is to generate an instrument to measure one specific aspect of culture that is believed to influence work behavior. Subsequent studies can then explore the relationship between this dimension, time preference, and a variety of work outcomes.

Time preferences

The way people organize their time is central to their daily experience. Allen Bluedorn, in his book *The Human Organization of Time*, asks, “What is a more fundamental process strategy than the choice of the pattern for one’s activities?” (p. 48) He notes that this choice of strategy is derived from a blend of culture and personality, and results in the storage of time preferences at very deep levels of consciousness. Peoples’ preferred pace of life can significantly affect their decisions regarding daily activities and lifestyle.

Time preferences can affect an employee’s behaviors at work. Frank Landy and his colleagues (Conte, Mathieu, & Landy, 1998; Landy, 1991) found strong relationships between a person’s time urgency and health and performance outcomes. Polychronicity, or a person’s preference for doing many things at once, has been shown to be important in studies of person-organization fit (Slocombe & Bluedorn, 1999). Polychronicity is also believed to be related to productivity in small or young firms (Schein, 1992). Although these specific facets of time preferences have been examined to some extent, entire areas of this construct have been left unmeasured. Additionally, time variables have been considered only in a simple predictor-criterion model at the individual level of analysis, whereas the effects of such a trait need to be considered as part of a more complex framework.

Researchers such as Harrison et al. (2002) have made the distinction between “deep-level” and “surface-level” traits. The purpose of such a distinction is to eliminate the

assumption that ethnic or racial diversity (surface-level characteristics) will necessarily play a large role in a team's ability to work together. A larger focus should be placed on alleviating the effects of deep-level differences, or those that directly affect the team's ability to work together. The organization and structure of psychological time is a deep-level characteristic, and one that has been only minimally addressed in the literature.

Understanding the value of time preferences is expected to have important implications, especially for team composition.

Team Composition

Work teams have been touted as the solution to many work-related problems. The workforce is seeing a dramatic increase in the use of team-based organizational structures, as organizations realize that traditional structures are inadequate in meeting their increased communication needs (Mohrman, Cohen, & Mohrman, 1995). However, teams rarely meet their potential with regard to increased productivity, increased innovation, or higher satisfaction. Rather, teams are often stricken with high degrees of conflict, miscommunication, and discontent (Campion, Medsker, & Higgs, 1993; Guzzo & Dickson, 1996). The reasons behind these problems are still largely unknown, despite the efforts of numerous researchers in the areas of team performance.

One potential source of conflict in teams is differences in culture. The blend of backgrounds, personalities, skills, and knowledge that is present in any given work team is the subject of much discussion (Timmerman, 2000). An unfortunate mix of people can lead to hostility and frustration in the team, as well as a multitude of problems for the organization (Paletz, Peng, Erez, & Maslach, 2004). It is of great interest to facilitate the creation of teams that work well together. The first step in doing so is to understand how the values and

preferences individuals hold influence their contribution to the team's outcomes. An enormous amount of energy has been devoted to examining the effects of cultural diversity on the performance of work teams (Guzzo & Dickson, 1996; Paletz et al., 2004; Timmerman 2000). However, one conspicuous gap in this literature is that there is yet no credible explanation for these effects. The bulk of team diversity research has focused on the effects of diversity (i.e., lower productivity, lower satisfaction), rather than the root causes of conflict that lead to decreased performance (Kirkman, Tesluk, & Rosen, 2004). Kirkman and others have advocated for increased understanding of the aspects of culture that may cause problems in teams. One aspect of culture that may detract from a team's ability to work together is differences with respect to the perception of time, such as differences in work pace and flexibility.

Many field studies have found that diverse teams suffer decreased performance. Polzer, Milton, and Swann (2002) note that diversity can serve as a "double-edged sword" to team effectiveness, increasing performance on some tasks and decreasing performance for others. Polzer et al. (2002) found that cultural diversity increased creative task performance, but only when interpersonal congruence was high, meaning that team members were only able to perform well when they viewed other team members as similar to themselves. Similarly, Thomas (1999) found that cultural diversity in work teams had a negative impact on effectiveness for several tasks. Cultural diversity also seems to decrease workers' affective reactions to their jobs. In two studies, Jackson (1991, 2004) found that cultural homogeneity increased positive attitudes and decreased absenteeism and turnover. She also found that homogeneity facilitated the performance of simple tasks and hindered the

performance of complex tasks, due to groupthink. These studies demonstrate that teams often have more difficulties when cultural diversity creates conflict with those who are different.

While nationality is often an easy way to categorize people, it is not optimal for describing differences between people. It serves as a proxy for cultural traits, which may not be clearly defined by national boundaries. Cultural differences may be the result of nationality, but could also be due to SES or other demographic differences. Researchers studying diverse teams have reported widely discrepant results, which may be due to the large amount of within-country variation. One example is the contrast between efficiency-centered individuals, who value speed, and effectiveness-centered individuals, who value quality. This value differs even within “Western” cultures (which are generally regarded as efficiency seeking), and within national, regional, and local cultures as well. Jehn, Northcraft, and Neale (1999) found that *value diversity* decreased satisfaction with the group, intent to remain, and commitment to the group. In this study, value diversity was defined as differences with respect to the way people think about the group’s target, mission or purpose, and included disagreements about effectiveness vs. efficiency. This study represented a shift from thinking about values purely as a cultural attribute. Instead, specific individual differences that could be hypothesized to impact team effectiveness were chosen.

While differences in values can be one possible source of conflict in culturally diverse teams, it is not the only source. Decreased or poor communication patterns also contribute to poor performance in culturally diverse teams. Hill (1982) found that the increased process loss suffered by diverse teams was due to differing communication patterns. Ancona and Caldwell (1992) also found that diverse teams often suffer process loss, which can be attributed to poor communication patterns and the resulting conflicts that arise.

Jarvenpaa and Leidner (1999) found that in virtual teams, the inability to communicate impacted team members' levels of trust for each other, which then affected their effectiveness. These studies highlight the importance of communication in teams. It is possible that poor communication patterns arise from differences in people's understanding of time. A valid instrument is needed with which to test this possibility.

Time and change are fundamental aspects of small group processes (Arrow, Poole, Henry, Wheelan, & Moreland, 2004). Time serves both as a context and a resource for work groups. In fact, teams are often implemented precisely because of time-related issues (i.e., increased speed; Mohrman et al., 1995). While the understanding of time is certainly socially constructed, it is inaccurate to assume that members share a common construction. National culture does seem to influence a person's understanding of time to a certain extent (Levine, 1997). Therefore, it follows that many negative effects of cultural diversity in teams may be the result of differences in time preferences.

Measurement of Time Factors

Existing measurement of time preferences covers a broad range of factors. These measures are presented in Table 1. At the most general level, Levine describes the *pace of life* as a national cultural variable (1997), or as a characteristic of cities (1999). Pace of life is defined as the speed with which individuals live their lives, operationalized as walking speed, clock accuracy, or service speed at a bank. While we can make intuitive comparisons between the U.S. and Brazil, or New York City and Montana, this is not a precise method of evaluating differences in individual time factors.

Bond and Feather (1988) created the Time Structure Questionnaire, which measures an individual's perception that his or her time is useful and purposive. Similarly, Zimbardo

and Boyd (1999) developed the Zimbardo Time Perspective Inventory, which measures one's tendency to place a frame of reference in the future, past, or present. However, these scales address only one dimension of time preferences. Additionally, they are very general, and address all aspects of a person's lifestyle choices. Therefore, a comprehensive work-specific measure is needed.

Schriber and Gutek (1987) described time dimensions of organizational culture, finding 13 reliable factors in a sample of United States organizations. This instrument did not attempt to measure individual preferences, but rather focused on norms. It is unclear whether these factors can be observed on an individual level. Additionally, the factors they found were limited, in that they were extracted from highly similar organizations. As a result, major omissions existed with regard to the domain of the instrument. Perhaps the most important omission was any assessment of polychronicity, a dimension that has been shown to be important for studies of person-organization fit (Slocombe & Bluedorn, 2001).

Another similar technique was employed by Ballard and Seibold (2004) in their Organizational Temporality Scale. The intent of this scale was to describe the ways in which temporality plays a role in workgroups. Respondents were asked to think about "the way work is done around here," rather than describe their preferred style. While this information might be useful in determining some performance outcomes, it cannot be assumed that peoples' responses reflect their preferred way of organizing their time.

Individual-level assessments include the Time Urgency scale. Frank Landy and his colleagues (Conte, Landy, & Mathieu, 1998; Landy, 1991) first described the concept of *time urgency*, or the individual propensity to pay attention to time, place importance on being punctual, and control deadlines and schedules. They measured five dimensions of time

urgency using a behaviorally-anchored rating scale. The dimensions, time awareness, scheduling, list making, eating behavior, and deadline control, were shown to influence job performance ratings (Conte et al., 1998). Time urgency in this sense is considered a behavioral pattern, rather than a value or preference.

Additionally, the Inventory of Polychronic Values, while intended as an organizational-level measure, was adapted to individual preferences as well (Bluedorn, Kalliath, Strube, & Martin, 1999). This instrument, while focusing on polychronicity (the tendency to have more than one project or event taking place at once), claims to assess the most “basic” dimension of time preferences, with the implication being that any other dimensions are subsumed. However, no empirical evidence exists to support this notion, as other dimensions of time preference were not assessed.

Alternative methods of assessing time perspective include direct observation, as Waller, Giambatista, and Zellmer-Bruhn (1998) chose to do. They measured the frequency of time-related behaviors, such as verbal announcements, clock-checking, etc. This method is more appropriate than self-report if the criterion of interest is actual behavior, as in assessments of time urgency. However, behavior can be restricted by any number of organizational or team norms and thus may not be indicative of individual time preferences or values. Additionally, clock-checking represents only one facet of time, while current instruments and theory support a multidimensional structure (Brislin & Kim, 2003; Schriber & Gutek, 1987).

Given that the information we can obtain from these instruments is insufficient, a more comprehensive instrument is needed to fully describe individuals' organization of time at work. Global time preference has been described only in a way that suggests that cultures

(on organizational or national levels) are homogeneous in their preferences, or that norms fully dictate one's preferences. Disagreements regarding the underlying structure of time preference exist and cannot be resolved if instruments are inadequate. The broad impetus for this research is to allow for the examination of the extent to which acculturation and individual variation play a role in determining an individual's preferred experience of time at work, as well as explore the possibility that substantial within-group differences exist. It is likely that the current measurement instruments omit substantial portions of the domain of interest, making accurate inferences impossible. Therefore, the current study proposes to devise an instrument that will evaluate work time preferences in a broad sense, while integrating prior work in this area.

Scale Structure

Items for the current instrument were created using anecdotal evidence from Bluedorn (2002) and Levine (1997), and existing theory of time preference dimensions (Brislin & Kim 2003; Levine 1997). Two primary factors (flexibility and pace), as described by Brislin and Kim, were addressed in the generation of items. The first is flexibility, or the tendency to follow one event to its natural conclusion before moving on versus the tendency to follow a strict timed schedule (i.e., do people control their schedule, or does their schedule control them?; Levine, 1997). The second is pace, or the importance placed on watches, deadline pressure, and achievement orientation.

Each factor is theorized (Brislin & Kim, 2003) to have five related subscales. For flexibility, these subscales are clock/event time, punctuality, task/social time at work, polychronicity/ monochronicity, and work/leisure time in life. For pace, the subscales are the meaning of silence, past/future orientation, time as symbol, pace, and

efficiency/effectiveness. See Table 2 for a definition of each hypothesized subscale. If an existing instrument contains a scale that overlaps with one of the current proposed dimensions, the items from the existing instrument will be modified as appropriate to reflect individual preferences at work. Based on this previous work, I propose the following:

Hypothesis 1: Individual time preferences will be expressed in ten dimensions.

Personality Correlates of Time Preferences

Several subscales of Big Five personality traits are expected to show positive correlations with various dimensions of time preferences. The expected pattern of these relationships is presented in Table 3, and detailed below.

Extraversion. Two subscales of extraversion are expected to correlate with measures of time preferences. *Activity level* is defined as leading a busy life, moving quickly and energetically. Individuals low in activity prefer a more leisurely, relaxed pace. Activity level is hypothesized to correlate positively with pace. *Friendliness* is defined as genuinely liking other people and openly demonstrating positive feelings toward others (Goldberg, 1999). People high in friendliness value social relationships. Therefore, it is expected that people high in friendliness will score high in valuing social time at work (Task/Social Time) as well.

Neuroticism. Several facets of Neuroticism are expected to correlate with measures of time preferences. *Immoderation* is a facet of Neuroticism that describes individuals' tendencies to be susceptible to cravings and urges. In other words, a high immoderation score indicates the inability to consider long-term goals. This facet should correlate strongly with Past/Future Perspective. *Self-Consciousness* is a facet that describes people's ease of embarrassment and fear that others are watching them. High self-conscious individuals may

also be prone to interpreting prolonged silence during interpersonal interaction as a negative sign, which is a characteristic of the proposed Silence subscale.

Conscientiousness. Facets of conscientiousness include orderliness, achievement striving, self-discipline, and cautiousness. Each of these facets has commonalities with aspects of time preference. *Orderly* individuals like deadlines, schedules, and routines. This facet is expected to correspond strongly with scores on the Clock/Event scale. *High Achievement-Striving* individuals have a strong sense of direction and are hard-working. This facet is expected to relate to a person's preferences with regard to Work/Leisure ratio (portion of year spent at work rather than engaging in other activities), as well as Task/Social ratio (portion of work day spent "on task" rather than socializing). *Self-Discipline* is the ability to persist with difficult or unpleasant tasks until they are completed. This is expected to relate to a person's preferences with regard to monochronic workloads. *Cautious* individuals take their time when making decisions. Low cautiousness individuals often do the first thing that comes to mind without deliberating alternatives or consequences. This facet may be related to people's preferences with regard to Efficiency/Effectiveness.

Cognitive Ability. Cognitive ability is not expected to relate to time preferences. This will serve as a discriminant measure.

Collectivism. Collectivism is a value that has been demonstrated to vary with national culture. High-scoring individualists tend to place more value on individual achievement, rather than achievement of the group. This value is expected to correlate with Task/Social Time, as individuals who value group efforts may be likely to spend time during the day fostering relationships with coworkers.

Lastly, certain demographic variables that may influence time perception will be assessed. If national culture relates to time perception scores, evidence for environmental influence will be provided. Levine and Norenzayan (1999) demonstrated that individuals from cities in the Northeast were faster-paced compared to cities in the South, and overall, urban areas were faster-paced than rural areas. This potential relationship will be explored in the current study.

Socio-economic status (SES) is another background variable that may have a relationship with time preferences. For instance, Zimbardo and Boyd (1999) found that relatively more wealthy people were higher in future time perspective. Possible links exist between SES and other dimensions of time preferences, as well. For example, individuals with high-paying jobs may learn to equate time with money, which is a characteristic of Value of Time preferences. This relationship will be explored in the current study.

Research Question 1: How do time preferences relate to a variety of personality, value, and demographic variables?

Method

Procedure

One hundred eighty-six items were written using theory from Brislin and Kim (2003). As existing theory provides a rich description of the expected dimensions, additional sources were used only to supplement existing material. Item generation was completed by the researcher with the help of two research assistants. The research assistants were told to model the form and reading level of the items after existing measures, and draw content from Brislin and Kim (2003) as well as case studies reported in Brislin and Cushner (1996). Data collection was completed in three stages, outlined below.

Stage 1: Content Validity Assessment. Eight subject matter experts (SMEs; graduate students contacted via email) were provided with a printed form containing each item and a definition of each dimension of time as described by Brislin and Kim (2003). Four SMEs were presented with items intended to describe the Pace facets, and four were presented with Flexibility items. The SMEs were asked to read each item and select the dimension with which it appeared to be most closely associated. A “none” option was also available for each item. They were also asked to indicate how strongly they felt about their choices (1 = “not sure,” 2 = “somewhat sure,” and 3 = “very sure”), to discourage guessing. If the SME was unsure about their rating, as indicated by a sureness value of 1, the category assignment for that item was disregarded. This information was used to assess the content appropriateness of the items. If an item had at least 75% agreement as to its appropriate factor, it was retained. Items that were judged by more than one expert to describe several dimensions, or no dimension, were eliminated from the pool. One hundred thirty items were retained after this stage of the study. A complete listing of retained items is presented in Table 4.

Stage 2: Item Quality. A convenience sample of sixty-three undergraduate students ($n = 31$ (*pace*) and $n = 32$ (*flexibility*)) who received credit for their introductory psychology class were asked to read the revised list of items, presented in a web-based form. It was assumed that these raters were similar in educational level to the eventual validation sample for this instrument. The raters were asked to rate the clarity and ease of response for each item on a 3-point scale, choosing from 1 (*low*), 2 (*medium*), and 3 (*high*). Items receiving low mean ratings on either clarity or response ease (defined as a mean rating below 1.5) were to be revised or eliminated. However, no items received low ratings for clarity or difficulty of response. The mean ratings are presented in Table 4.

Stage 3: Construct Validity. Participants for this stage of the validation effort were undergraduate students who volunteered to participate in order to receive class credit, as well as other undergraduate and graduate students who were willing to volunteer. Announcements were sent to the presidents of international student groups in the fall of 2005 in order to solicit volunteers. For those participants who did not receive class credit, a \$50 lottery was offered as a participation incentive. Only students who currently held a part-time or full-time job were eligible. A total of 601 employed students participated in this stage of the data collection. The mean age of the respondents was 18.9. Approximately 41% of the sample was male. With regard to ethnicity, 78.3% of the sample was Caucasian, 10.0% was African-American, 2.1% was Hispanic, 6.8% was Asian/Indian, 1% was Native American, and 1.2% selected “other.” An attempt was made to gain participation from as many international students as possible. However, only 4.6% of the sample most strongly identified with a country other than the U.S.

Participants were directed to a website, where they were asked to fill out a 236-item questionnaire containing the complete list of retained Time Preferences items, selected personality measures, and background questions. They were asked to indicate their agreement or disagreement with each Time Preferences item on a 5-point Likert scale (with anchors “strongly disagree,” “disagree,” “neutral,” “agree,” and “strongly agree”) based on the way they usually feel with regard to the item. Background questions included age, gender, nationality, racial/ethnic background, parent’s education, major, and GPA.

Measures

A variety of personality, values, and background variables that may relate to time preferences were included in this study. These measures are described below.

Personality. Big Five personality traits were measured with ten-item scales taken from the International Personality Item Pool (IPIP; Goldberg, 1999). Each of the facets used in the current study is a subset of either Extraversion (E), Neuroticism (N), or Conscientiousness (C). Agreeableness and Openness to Experience, the fourth and fifth factors, were not included, as no clear theoretical link existed between these factors and time preferences. The included facets were Activity level (E), Friendliness (E), Immoderation (N), Self-Consciousness (N), Orderliness (N), Achievement-Striving (N), Self-Discipline (N), and Cautiousness (N). Each item was measured using a five point Likert-type response scale with anchors “strongly disagree,” “disagree,” “neither agree nor disagree,” “agree,” and “strongly agree.” A complete list of personality items is presented in Appendix A.

Collectivism (Wagner, 1995). Collectivism was assessed with an eight-item scale developed by Wagner (1995). Sample items include “I prefer to work with others in a group rather than working alone” and “Winning is everything.” These items were measured with a 5-point Likert-type (strongly disagree-strongly agree) response scale as well.

Cognitive Ability. Grade point average (GPA) was used as a proxy measure of cognitive ability. Respondents were asked to choose GPA-point range, in increments of .25, that corresponded to their cumulative GPA.

Socio-economic status (SES). SES was assessed with a two-item proxy measure: “What is the highest level of education you have attained or plan to attain?” and “What is the highest level of education attained by your parents?” These items are similar to items used on the U.S. Census, although they were modified slightly in order to ensure their appropriateness for a college student sample (Entwistle & Astone, 1994). Response options

for these items were: High School, Two-Year Degree, Four-Year Degree, Graduate/Professional Degree, or Other.

Background. Several demographic variables were assessed. Participants were asked to indicate their age, gender, ethnicity, and nationality. For participants who indicated that they were from the U.S., two follow-up questions were administered: “Please indicate the region in which you spent the greatest amount of time growing up,” with response options including Northeast, Southeast, South, Southwest, Pacific, Midwest, Rocky Mountains, or Other. The second question was “Did you grow up in a mostly urban, mostly suburban, or mostly rural setting?”

Analysis

Data analysis was conducted in three stages. Prior to data analysis, items were reverse-scored where appropriate. The data were also visually examined for suspect cases (based on illogical open-ended responses or inconsistent responses to Likert-type items—e.g., responding with “strongly agree” for every item) and completeness. After removing these 20 cases, 581 remained.

Two random samples, each consisting of approximately 50% of the cases, were then generated using SPSS. The first sample of 283 was used in an exploratory factor analysis, and the second sample was retained for a confirmatory factor analysis. This step was taken in order to ensure that the exploratory analysis did not capitalize on chance characteristics of the sample.

The first stage of the analysis consisted of an exploratory factor analysis. The first sample ($n = 283$) was used for this purpose. All time preferences items were used for this analysis. The scree plot was examined to determine the proper number of factors. It was

expected that the factors would correlate with one another, based on limited evidence that certain aspects of time preferences are related (Bond & Feather, 1988; Schriber & Gutek, 1987). Therefore, an oblique (Promax) rotation was used to determine the most suitable factor structure. Items that had standardized loadings above .4 on any single factor only were retained. Items that cross-loaded (i.e., had loadings above .4 on more than one factor), or failed to load on any factor, were discarded. The items making up each factor were then examined to determine the nature of the underlying construct. In cases when no theoretically meaningful construct could be determined, the factor was discarded.

The second stage of the analysis involved conducting confirmatory factor analysis (CFA) using the second sample ($n = 298$). The SAS system's CALIS procedure was used for this step of the analysis. Several models were tested. In the first model, only items that loaded above .50 in the exploratory analysis were included. Further, highly redundant items in these factors were eliminated, so the factor would not be unduly overrepresented by these items. The second CFA model tested followed Brislin and Kim's (2003) predicted structure (i.e., ten factors: see Table 2). Finally, a two factor model was tested, in which Pace and Flexibility were considered. This model was tested based on Brislin and Kim's (2003) implication that Pace and Flexibility comprise two broad constructs, each consisting of five subcategories.

The third stage of the analysis involved using the entire sample of 583 to test the final scales for convergent and discriminant validity. This was done by correlating composite factor scores with personality and demographic items that had theoretical relationships with those factors (see Table 3). The composite scores were calculated by taking the mean response for the items comprising the factor.

Results

Exploratory Factor Analysis

For the first stage of the analysis, the scree plot of the EFA was examined to determine the number of factors that should be extracted. The scree plot had a distinct curvature at the tenth factor (see Figure 1). Therefore, the number of factors was set at nine, and the analysis was re-run. The Promax rotation resulted in an uninterpretable solution such that the first several factors contained an extremely broad mixture of items from different categories. The analysis was re-run using an orthogonal (Varimax) rotation, which yielded a much better result. The factor loadings are presented in Table 5. The resulting solution explained 32.8% of the variance in the items. Due to the large number of items included in this analysis, and the diversity of constructs represented, the percentage of variance explained was fairly low when compared with more specific, smaller scales.

At this point, the factors were examined for meaningfulness. Factors 7, 8, and 9 were discarded based on the fact that they did not contribute significantly to the explained variance of the model. Further, the items that made up these factors did not have loadings above .5. Therefore, it was determined that these factors could be discarded without further investigation.

Six meaningful factors, consisting of a total of 50 items with loadings above .5, were retained after this stage. Of these, fifteen items that were judged to be highly redundant were eliminated from this analysis in the interest of parsimony (e.g., “I feel that meeting times are usually flexible” and “I believe meeting times are flexible”). In cases where redundant item pairs were identified, the item with the higher loading from the EFA was retained and the item with the lower loading was eliminated. The six factors were identified as follows.

Schedules & Punctuality (20 items, $\alpha = .89$) reflects a person's attitudes toward maintaining a strict clock-based schedule, including being in a place at the exact time specified. Monochronicity (6 items, $\alpha = .86$) reflects a person's preference for finishing one task before beginning another, and can also be conceptualized as a preference for linear time compared to cyclical time. Task/Social Time (10 items, $\alpha = .91$) reflects a person's preferred ratio of time spent socializing to time on task while at work. Value of Time (4 items, $\alpha = .85$) reflects a person's tendency to think of time as a tangible resource that can be wasted. Work/Leisure Time (5 items, $\alpha = .87$) reflects a person's preferred ratio of time spent at work or doing work compared to time spent with family or friends, or engaged in other activities. Pace (5 items, $\alpha = .84$) reflects a person's preferred speed at work. The remaining three factors did not have any discernable meaning, and were discarded (see Table 6).

Confirmatory Factor Analysis

The 35 items that were retained after EFA were tested in the first CFA model (see Appendix B). The six factor variances were each set at one (in order to establish a scale for the factors), and the factor covariances were freed for estimation. This model contained 630 data points ($(p(p+1))/2$), and required that 85 parameters be estimated (15 covariances, 35 factor loadings, and 35 error terms); therefore, the model had 545 degrees of freedom. The chi-square goodness of fit test for this model was significant, and the fit indices for this model did not meet the requirements specified by Hu and Bentler (1998) for an adequate fit. Good fit is indicated by an RMSEA below .06 and SRMR below .08, in combination with CFI, NFI, and NNFI indices above .95 (Hu & Bentler, 1998). Table 7 contains a list of all fit statistics for the model. All estimated factor loadings and error terms are presented in Figure 2, and the factor covariance matrix is presented in Table 8.

For the second model, forty-six items that were judged by the researcher to best describe each factor were selected to be included in this model. Table 5 indicates the items that were selected for Model 2. As in the first model, each of the ten factor variances was set at one. The factor covariances were freed for estimation in this model. The fit of this model was also poor, as determined by Hu and Bentler's (1998) recommendations. The fit statistics for this model are presented in Table 7.

For the third model, sixteen items that were judged to represent Pace (8 items) and Flexibility (8 items) were selected. The items selected for this model are presented in Table 5. CFA demonstrated that the fit of this model was also poor (see Table 7).

Hypothesis 1 proposed that a ten-factor model would be the best representation of the Time Preferences constructs. This hypothesis was not supported. Based on the results of the EFA and CFA, it was determined that the six-factor model was the best representation of the data in this sample. MacCallum, Browne, and Sugawara (1996) note that in large models, the fit indices may falsely indicate poor fit in a model due to the large number of degrees of freedom. MacCallum et al. (1996) recommend that the RMSEA be used, as it compensates for model complexity (Hu & Bentler, 1999). Thus, the six-factor model (RMSEA = .055) had the best fit, and this structure was used to compute composite factor scores for each factor. Descriptive statistics for the composite scores are presented in Table 8. A final listing of the items used to compose these scales is presented in Appendix B.

Convergent and Discriminant Validity

Convergent and discriminant validity were examined next. Two subscales of extraversion were expected to correlate with measures of time preferences. The correlation between Activity Level and Pace was significant ($r = -0.14, p = .001$), although this was not

the expected direction of this relationship. It was also expected that people high in friendliness would score high in valuing social time at work (Task/Social Time). This correlation was also significant ($r = -.26, p = .001$). This indicated that respondents who were high in Friendliness also preferred a smaller proportion of on-task time compared with social time at work, and was consistent with predictions.

Several facets of Neuroticism were expected to correlate with measures of Perspective and Silence. However, neither a Perspective nor Silence scale emerged from the EFA or CFA analysis — therefore, these relationships could not be tested.

Four facets of conscientiousness were examined (orderliness, achievement striving, self-discipline, and cautiousness). Orderliness was expected to correspond strongly with scores on the Clock/Event scale. The Schedules scale that emerged from analysis contained items from the Clock/Event and Punctuality categories. The correlation between Schedules and Orderliness was significant ($r = .25, p = .001$), indicating that orderly individuals also tend to prefer a tightly scheduled day. High Achievement-Striving was expected to relate to a person's preferences with regard to Work/Leisure ratio (portion of year spent at work rather than engaging in other activities), as well as Task/Social ratio (portion of work day spent “on task” rather than socializing). However, Achievement-Striving did not correlate with either Work/Leisure ($r = -.02$) or Task/Social ($r = -.05$). Self-Discipline was expected to relate to a person's preferences with regard to polychronic or monochronic workloads. The relationship was not significant ($r = -.05$). Cautiousness was expected to relate to people's preferences with regard to Efficiency/Effectiveness. However, this scale did not emerge, and the relationship could not be tested.

Cognitive ability was not expected to correlate with any facet of time preferences, and was included as a discriminant measure. This hypothesis was supported, with the exception of the Schedules scale ($r_{schedules} = .16, p = .001$; $r_{social} = .01, r_{pace} = .05, r_{leisure} = -.06, r_{value} = -.02, r_{monochron} = -.01$). Collectivism was expected to correlate with Task/Social Time. This relationship was significant ($r = -.24, p = .001$), indicating that individuals high in collectivism are less likely to have a strong Task focus during the day.

Lastly, certain demographic variables that can influence time perception were assessed. Levine (1999) demonstrated that individuals from cities in the Northeast were faster-paced compared to cities in the South, and overall, urban areas were faster-paced than rural areas. In the current study, respondents from urban, rural, or suburban backgrounds were not significantly different from one another in pace ($F(2,563) = 0.22, p = .81, R^2 = 0.0$). With regard to geographic location, respondents did not differ in any of the facets of time preferences based on the area of the country they grew up in, with the exception of Value of Time ($F(6, 574) = 2.30, p = .025; R^2 = .028$). Post-hoc analyses were conducted using dummy-coded variables for each region. This revealed that participants from the Pacific region of the U.S. ($m = 3.46$) were significantly less likely than participants from the northeast ($m = 3.61$) to indicate that they valued time ($\beta = -.15, p = .03$). Participants from the southeast ($\beta = -.03$) and participants from the south ($\beta = -.03$) had slightly lower scores than participants from the northeast, but these differences were not significant. Overall, geographic region explained 2.8% of the variance for this dimension.

SES was expected to correlate with time preferences. Multiple regression analyses showed that SES was not a significant predictor of any of the time preferences dimensions.

Summary

Of the eleven relationships predicted, three could not be tested, three were fully supported and one was partially supported. The remaining four were rejected. Several exploratory tests were conducted as well, which yielded mixed results. Overall, the Task/Social factors appeared to be well-supported by convergent validity evidence, as did the Schedules/Punctuality factor. A complete bivariate correlation matrix describing the relationships between all measured variables is presented in Table 9.

Discussion

The goal of this study was to develop an instrument that measured the dimensions predicted by Brislin and Kim (2003). Initial analysis suggested that at least in a U.S. sample, six of the ten factors held: Schedules, Monochronicity, Pace, Work/Leisure Time, Task/Social Time, and Value of Time. Efficiency, Perspective, and Silence factors did not emerge, and the Punctuality factor was incorporated into the Schedules factor. Further tests of the model using confirmatory factor analysis demonstrated that this six-factor model had an adequate fit, although problems certainly exist. Further work is needed to refine and respecify this model before it is used in organizations. For example, future analysis may examine the possibility that two second-order factors (i.e., pace and flexibility) exist.

These results should be viewed with caution. As in any model, the factor structure obtained in these analyses was dependent on the items written for this purpose. A moderate degree of redundancy was present in these items in order to boost the scale reliabilities-- however, this can have a disproportional effect on the eventual nature of the factors. A different set of items, or a different sample, would likely yield a somewhat different factor structure and certainly different patterns of relationships between items. However, the current

study does yield valuable information as a first step toward creating a reliable and valid measure for individual time preferences.

Limitations

Sample. This study had several limitations. First, the sample was predominantly of U.S. origin. Although Brislin and Kim's (2003) framework should have held for U.S. samples as well as international samples, the restriction of range for many variables most likely produced underestimates of the correlations, which would compromise the factor analyses. Further, a certain degree of social desirability was present in many of the items, further restricting the range of the responses.

Method. The method used to collect data for this study may have introduced several sources of error. Self-report items can be subject to social desirability bias, as well as fatigue or satisficing patterns. The operationalization of certain variables may have introduced error into the results. For example, cognitive ability was measured by the student's GPA. While GPA is partially determined by cognitive ability, it is not a pure measure, and many other factors contribute to GPA. The correlation between GPA and Schedules that was found may be due to this overlap. It is probable that individuals who strongly value punctuality achieve higher GPAs, regardless of their cognitive ability.

Analysis. The six-factor model violated several of the recommendations for confirmatory factor analysis. First, the model had 35 indicator variables, and six factors. This number of indicators is above the recommendation made by Hatcher (1998), who cautions that models with more than 20-30 indicators will result in large chi-square values and poor model fit. Additionally, Hatcher (1998) recommends a maximum of five factors for any

given model. However, the number of parameters included was the minimum necessary to accurately represent the breadth of the constructs.

Other problems with the model were also present. The minimum number of observations recommended by Hatcher (1998) is the larger of 150 or 5 observations per estimated parameter. The six-factor model required 85 parameters to be estimated, which yields a minimum number of 425 recommended observations. This is well below the actual sample size of 298. However, MacCallum et al. (1999) demonstrated that rules of thumb for determining sample size are not valid, and that when communalities are high, population parameters can be accurately estimated with small sample sizes (i.e., 100-200). Adequate sample size is also determined by features of the model such as how well the factors are defined. In this study, the communalities were moderate, and the factors were fairly well defined. The sample size of 298 may have been adequate for accurate parameter estimation.

Future Research and Theoretical Implications

Despite the limitations noted above, this study can serve as the first step to gathering important information about work teams. Initially, samples from different cultures can be compared to determine if the factor structure of time preferences is truly the same for non-U.S. and U.S. workers. If it is, further analysis can determine if invariance exists between cultural groups, whether international or within regions of the United States. If it is determined that cultural groups in fact experience time in different ways that do not follow the same patterns as predicted, current theories will need to be adapted to include these differences.

Future studies can also investigate this scale's predictive validity. For example, the Time Preferences scale can be used to predict organizational outcomes such as commitment,

satisfaction, or justice perceptions. Additionally, time perception may be important in predicting person-organization fit. Slocombe and Bluedorn (1999) found that the congruence between a person's preferred level of polychronicity and organizational-level polychronicity was predictive of their commitment and perceived level of performance in the organization. Put another way, when the level of organizational polychronicity matched the individual's preferred level, individuals tended to be more committed to the organization. It may also be the case that organizational-level Scheduling norms or Work/Leisure norms can influence perceptions of person-organization fit in this way.

Finally, this scale can be used to gain a better understanding of the factors that contribute to a person's time preferences. Time is a fundamental aspect of our daily experience, and our preferences related to time play a large role in how our work is structured and organized. It may be the case that these preferences change over time, or are dependent on contextual factors. Workplaces do differ with regard to time-related organizational norms (Schriber & Gutek, 1987)—understanding individual differences is key to fostering a healthy workforce.

Practical Implications

A global workforce is now the norm for many types of organizations. If stable individual differences can be measured with regard to time perspective, more effective international teams can be created by considering these differences. If a team is to be working closely together, establishing norms that take these differences into account can be highly beneficial to improving group processes.

While time preferences may be primarily a cultural phenomenon as suggested by Brislin and Kim (2003), within-group differences will surely exist, and this type of

intervention can benefit culturally homogeneous teams as well. Any team has members with differing personalities and backgrounds (van Vianen & De Dreu, 2001). It may be that these types of differences also contribute to differing time preferences. Preferences may develop as the result of cultural, situational, or biological influences. Gaining knowledge of these factors is essential in developing good strategies to cope with them.

Additionally, information regarding time preferences can benefit cultural diversity training programs. The first stage of this type of program typically attempts to provide workers with awareness regarding the ways other workers may have different values or attitudes. Time preferences information can be included in this process to provide workers with an understanding of how cultural differences may lead to differences in the structure and pace of the workday. Currently, this information is too general to be of much practical use—however, with further research in this area, the relationship between culture and time preferences can be understood and disseminated to workers.

Conclusion

This study demonstrated that individual time preferences can be reliably measured. While future research is needed to refine these scales, this is a first step towards understanding a fundamental aspect of the way people experience time at work. Armed with this knowledge, psychological researchers can create more effective training programs, leading to the creation of more effective international work teams. With so many organizations becoming international and team-based, this work may be beneficial to fostering a high-performance work environment.

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APPENDIX

APPENDIX A

Personality Items

Achievement-Striving

I demand quality.

I plunge into tasks with all my heart.

I go straight for the goal.

I put little time and effort into my work (R)

I work hard.

I turn plans into action.

I set high standards for myself and others.

I do more than what's expected of me.

I am not highly motivated to succeed (R)

I do just enough work to get by (R)

Activity Level

I like to always be busy.

I like to take it easy (R).

I react slowly (R).

I can manage many things at a time.

I let things proceed at their own pace (R).

I am always on the go.

I like to take my time (R).

I react quickly.

I like a leisurely lifestyle (R).

I do a lot in my spare time.

Cautiousness

I like to stick to my chosen path.

I often make last minute plans (R).

I act without thinking(R).

I avoid mistakes.

I choose my words with care.

I jump into things without thinking(R).

I make rash decisions(R).

I like to act on a whim(R).

I rush into things(R).

I do crazy things(R).

Collectivism

Winning is everything (R)

I feel that winning is important in work and games (R)

Success is the most important thing in life. (R)

It annoys me when other people perform better than /I do. (R)

Doing your best isn't enough – it is important to win. (R)

I prefer to work with others in a group rather than working alone

Given the choice, I would rather do a job where I can work alone rather than doing a job where I have to work with others in a group. (R)

Working with a group is better than working alone

Friendliness

I like to keep others at a distance (R).

I often feel uncomfortable(R).

I make friends easily.

I cheer people up.

I warm up quickly to others.

I act comfortably with others.

I am not really interested in others(R).

I feel comfortable around people.

I am hard to get to know(R).

I avoid contact with others(R).

Immoderation

I easily resist temptation (R).

I tend to do things that I later regret.

I never splurge (R).

I often eat too much.

I love to eat.

I never spend more than I can afford (R).

I am able to control my cravings (R).

I rarely over indulge (R).

I go on binges.

I don't know why I do some of the things I do.

Orderliness

I love order and regularity.

I do things according to a plan.

I like to tidy up.

I am not bothered by messy people.

I often forget to put things back in their proper place.

I leave my belongings around.

I like order.

I leave a mess in my room.

I want everything to be "just right."

I am bothered by disorder.

Self-Consciousness

I am afraid that I will do the wrong thing.

I am comfortable with unfamiliar situations.

I find it difficult to approach others.

I am easily intimidated.

I stumble over my words.

I am only comfortable with friends.

I am able to stand up for myself.

I am afraid to draw attention to myself.

I am not embarrassed easily.

I am not bothered by difficult social situations

Self-Discipline

I get chores done right away.

I postpone decisions.

I get to work at once.

I have difficulty starting tasks.

I need a push to get started.

I find it difficult to get down to work.

I am always prepared.

I start tasks right away.

I waste my time.

I carry out my plans.

APPENDIX B

Factors and Items

Factor 1: Schedules and Punctuality

It does not bother me to be late to appointments

I do not mind being late

I get upset when others are late for work

I do not pay much attention to schedules

I feel that appointment times are usually flexible

I feel guilty when I am late to meet someone

I like to take each day as it is rather than trying to plan it out

It is rude to be late to an appointment

Factor 2: Monochronicity

I prefer to do one thing at a time

I prefer to complete one task before beginning another

I would rather complete parts of several projects every day than complete an entire project

I believe it is best for people to be given several tasks and assignments to perform

I believe people do their best work when they have many tasks to complete

I can perform my tasks in any order and still get the job done

Factor 3: Pace

I expect others to work very fast

I like to push myself to work very fast

I like a work environment that is fast paced

I rush to finish tasks so I can move on to the next one

I prefer people to “get to the point”

Factor 4: Task/Social Time

I like socializing to be a large part of my work day

It is important that I have time at work to socialize

I like my business and social activities to mix

I believe talking with coworkers wastes time

I get annoyed when people discuss personal matters at work

Factor 5: Work/Leisure Time

I usually do work on my days off

When I go on vacation, I like for my boss to know how to reach me

I look forward to time away from work

I prefer to work through lunch

I am eager to leave work to spend time with my family

I like to stay late to finish my work

Factor 6: Value of Time

Time is a precious resource

Time is valuable

It is better to make a bad decision quickly, than a good decision slowly

I prefer to spend more time on important tasks

Table 1

Comparison of Time Preference Measures

Surveys of Organizational Norms	Surveys of Individual Differences	Direct Assessments of Behavior
Time at Work Scale (Schriber & Gutek, 1987)	Stanford Time Perspective Inventory (Zimbardo & Boyd, 1999)	Time Urgency Scale (Landy 1991)
Organizational Temporality Scale (Ballard & Seibold 2004)	Time Structure Questionnaire (Bond & Feather 1988)	Pace of Life (Levine 1997)
Inventory of Polychronic Values (Bluedorn et al, 1999)		Clock-checking (Waller et al. 1998)

Table 2

Ten proposed dimensions of time preferences (Brislin & Kim, 2003)

Flexibility		Clock time people prefer to follow a strict schedule dictated by the clock, whereas event time people prefer to follow an event to its natural conclusion before beginning another.
	Clock/Event	
	Punctuality	Punctual people place high importance on being at a location at the exact time specified.
	Task/Social	People high in task orientation prefer a lower ratio of time at work spent socializing to time “on-task”. High socially oriented people prefer a higher ratio of social time and do not view this time as wasted.
	P-Time/M-time	Polychronic people prefer to switch back and forth between tasks, or have many things they attend to at one time. Monochronic people prefer to begin and complete a single task before moving on.
	Work/Leisure	People high in leisure time orientation prefer a higher ratio of vacation time and time spent away from work than those with a high work orientation.
Pace		People who move, speak and work at a fast pace would be high on “pace”, and people who take more time to complete tasks would be lower.
	Pace	
	Silence	People interpret the meaning of silence in different ways. People high on this dimension interpret silence negatively and feel the need to “fill in” the silence. People who have low scores on this dimension appreciate silence as a sign that others are thinking about what has been said.
	Orientation (Future/Past Perspective)	People have differing time frames concerning the frame of reference they use to orient events in their life. Future-orientation people tend to focus on the future and future achievement, whereas past- and present-oriented individuals also tend to be less achievement-oriented.
	Symbolic Meaning	People differ with respect to their attitudes about “wasting time” or allowing time to “fly by”. Those high in symbolic meaning of time tend to treat time as a precious resource not to be wasted.
	Efficiency/Effectiveness	People vary with respect to whether they place more importance on efficiency, getting things done more quickly, or effectiveness, getting things done better.

Table 3

Proposed Multitrait Matrix

Category	Facet	Activity	Friendliness	Immoderation	Self-Consciousness	Orderliness	Achievement	Self-discipline	Cautiousness	Individualism	GPA	SES	Geographic Location
Flexibility	Clock/event					+							+
	Punctuality					+							+
	Task/social		+				+			+			+
	P-time/M-time							+					+
	Work/leisure						+						+
Pace	Pace	+										+	+
	Silence				+								+
	Orientation			+									+
	Value of Time											+	+
	Efficiency								+			+	+

+ indicates that a positive correlation is expected.

Table 4

Complete Item List with Content Validity Evidence and Clarity and Ease of Response Ratings

Item #	Item	Expected Factor ¹²	Clarity ³		Ease of Response	
			Mean ⁴	SE(m)	Mean ⁵	SE(m)
1	I prefer to plan my activities so that they follow a particular pattern		2.63	0.102	2.43	0.114
2	I prefer to have a daily work routine which I follow		2.80	0.088	2.73	0.095
3	I don't like my schedule to be set in stone (-)	1	2.67	0.088	2.03	0.140
4	I prefer to do things when I am ready rather than on a schedule (-)	1	2.73	0.095	2.20	0.147
5	Staying on schedule is important to me	1	2.87	0.063	2.20	0.139
6	I do not pay much attention to schedules (-)	1	2.80	0.088	2.10	0.147
7	I like to dawdle.	1	2.53	0.115	2.53	0.124
8	I like my day to follow a tight schedule		2.67	0.100	2.47	0.115
9	I like to take each day as it is rather than trying to plan it out (-)	1	2.47	0.133	2.53	0.124
10	I like to make a list of things I need to do in a day		2.83	0.069	2.57	0.124
11	I like my day to be planned around events (-)	1	2.57	0.133	2.33	0.154
12	I can be flexible if people change appointment times		2.63	0.102	2.20	0.155
13	I don't like when my schedule is up n the air		2.50	0.115	2.47	0.142
14	I prefer all my work to be tightly scheduled	1	2.43	0.133	2.67	0.100
15	I like to plan my time carefully	1	2.77	0.079	2.43	0.124
16	It is easy for me to find time to plan something new, in addition to what I already have planned		2.37	0.148	2.50	0.115

¹ Based on Subject Matter Expert (SME) assignments with 75% agreement or more. When no number appears, item was not assigned to any factor.

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Table 4 (continued)

Complete Item List with Content Validity Evidence and Clarity and Ease of Response Ratings

Item #	Item	Expected Factor ¹²	Clarity ³		Ease of Response	
			Mean ⁴	SE(m)	Mean ⁵	SE(m)
17	I like my work routine to change		2.77	0.079	2.37	0.122
18	I like to be careful about meeting times	2	2.33	0.138	2.17	0.152
19	I believe meeting times are flexible (-)	2	2.50	0.133	2.37	0.131
20	I like to plan my day down to the minute	1	2.57	0.124	2.40	0.123
21	I don't like to plan my day around timed events (-)	1	2.47	0.124	2.60	0.103
22	I like to pay close attention to the time at work	1	2.63	0.122	2.73	0.095
23	Appointments have priority	2	2.57	0.104	2.50	0.115
24	I like my day to flow from one event to another (-)	1	2.47	0.124	2.57	0.114
25	I like to set my watch ahead of time	2	2.70	0.128	2.63	0.089
26	It is important to me that my clock is accurate	2	2.80	0.088	2.23	0.157
27	I do not like when tasks take longer than planned		2.83	0.084	2.10	0.139
28	I prefer not to have a set schedule during a big project (-)	1	2.67	0.111	2.13	0.142
29	I like to be free to set my own schedule		2.80	0.088	2.63	0.102
30	I could fit more into my workday if I had to		2.53	0.115	2.17	0.145

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Table 4 (continued)

Complete Item List with Content Validity Evidence and Clarity and Ease of Response Ratings

Item #	Item	Expected Factor ¹²	Clarity ³		Ease of Response	
			Mean ⁴	SE(m)	Mean ⁵	SE(m)
31	It is very important to me to be “on time” for everything	2	2.80	0.101	2.17	0.128
32	I get upset when I am late for work	2	2.83	0.084	2.33	0.130
33	I get upset when others are late for work	2	2.80	0.088	2.70	0.109
34	I do not care what time I arrive for work (-)	2	2.80	0.101	2.70	0.085
35	I do not care what time others arrive to work (-)	2	2.73	0.106	2.23	0.141
36	I care if I am late returning from a meal break	2	2.73	0.106	2.43	0.114
37	If I arrive an hour late for work, I will feel rushed all day	2	2.77	0.104	2.20	0.130
38	I like to make people wait for me		2.63	0.131	2.63	0.102
39	I like to be on time	2	2.83	0.084	2.57	0.104
40	I do not mind being late (-)	2	2.73	0.117	2.73	0.082
41	It does not bother me to be late to appointments (-)	2	2.70	0.119	2.60	0.113
42	I prefer to be to an appointment early	2	2.50	0.142	2.33	0.138
43	I prefer people to wait for me before they start a meeting		2.63	0.112	2.37	0.122
44	I get irritated when people are late	2	2.73	0.082	2.33	0.138
45	I feel guilty when I am late to meet someone	2	2.80	0.088	2.77	0.104

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Complete Item List with Content Validity Evidence and Clarity and Ease of Response Ratings

Item #	Item	Expected Factor ¹²	Clarity ³		Ease of Response	
			Mean ⁴	SE(m)	Mean ⁵	SE(m)
46	It is okay to miss appointments (-)	2	2.77	0.092	2.50	0.133
47	It is rude to be late to an appointment	2	2.87	0.063	2.47	0.133
48	I feel that appointment times are usually flexible (-)	2	2.77	0.079	2.50	0.133
49	I hate waiting for people who are late	2	2.87	0.063	2.50	0.115
50	I care if others are late returning from a meal break	2	2.83	0.069	2.60	0.113
51	I prefer meetings to start within five minutes of my arrival		2.70	0.085	2.30	0.153
52	I would feel the need to apologize if I were more than five minutes late for a meeting	2	2.80	0.074	2.33	0.138
53	I believe the start of a meeting is to be taken seriously	2	2.63	0.131	2.10	0.162
54	It is important that I have time at work to socialize (-)	3	2.73	0.082	2.57	0.124
55	I look forward to time away from work (-)	5	2.80	0.088	2.53	0.124
56	I like my business and social activities to mix (-)	3	2.53	0.115	2.30	0.137
57	I do not like to socialize at work	3	2.77	0.092	2.70	0.098

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Table 4 (continued)

Complete Item List with Content Validity Evidence and Clarity and Ease of Response Ratings

Item #	Item	Expected Factor ¹²	Clarity ³		Ease of Response	
			Mean ⁴	SE(m)	Mean ⁵	SE(m)
58	I like socializing to be a large part of my work day (-)	3	2.77	0.092	2.50	0.115
59	I like to take many breaks in order to socialize (-)	3	2.70	0.098	2.53	0.115
60	I like to spend most of my day on task rather than socializing	3	2.77	0.092	2.17	0.145
61	I prefer to work alone	3	2.93	0.046	2.57	0.114
62	I like to take time to help others with their work (-)	3	2.87	0.079	2.70	0.085
63	I prefer to socialize when I am on a break	3	2.83	0.069	2.60	0.103
64	I like to work on my break	3	2.83	0.069	2.80	0.074
65	I prefer to think about work on my break	3	2.70	0.109	2.37	0.122
66	I like to take breaks in between tasks		2.87	0.063	2.37	0.131
67	I like to finish my work before I take a break	3	2.83	0.069	2.60	0.113
68	I prefer my time at work to be “on-task”	3	2.47	0.133	2.43	0.133
69	It is important to stay on-task” at work	3	2.77	0.079	2.43	0.114
70	I like to take breaks whenever I want to		2.67	0.111	2.73	0.095
71	I believe talking with coworkers wastes time	3	2.80	0.074	2.03	0.140

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Table 4 (continued)

Complete Item List with Content Validity Evidence and Clarity and Ease of Response Ratings

Item #	Item	Expected Factor ¹²	Clarity ³		Ease of Response	
			Mean ⁴	SE(m)	Mean ⁵	SE(m)
72	I do not have time to take breaks during the day		2.70	0.109	2.20	0.147
73	Co-workers who are too friendly disrupt the work process	3	2.73	0.082	2.20	0.139
74	I get annoyed when people discuss personal matters at work	3	2.77	0.079	2.10	0.147
75	I prefer to work with others to get the job done .		2.90	0.074	2.53	0.124
76	I like to build relationships at work		2.77	0.092	2.47	0.115
77	Once I start a task I prefer to persist until I have completed it	4	2.73	0.095	2.53	0.124
78	I prefer to focus on one thing at a time	4	2.83	0.084	2.57	0.124
79	I prefer to work on one project at a time	4	2.87	0.063	2.33	0.154
80	I would rather complete an entire project every day than complete parts of several projects	4	2.53	0.133	2.20	0.155
81	I believe people should try to do many things at once (-)	4	2.60	0.123	2.47	0.142
82	I believe people do their best work when they have many tasks to complete (-)	4	2.70	0.098	2.67	0.100
83	I prefer to complete one task before beginning another	4	2.90	0.074	2.43	0.124
84	I believe it is best for people to be given several tasks and assignments to perform (-)	4	2.60	0.113	2.50	0.115
85	I am comfortable doing many tasks at once (-)	4	2.57	0.114	2.37	0.122
86	I prefer to do one thing at a time	4	2.87	0.063	2.17	0.152
87	I do not like to work on more than a single task or assignment at the same time	4	2.93	0.046	2.37	0.131

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Table 4 (continued)

Complete Item List with Content Validity Evidence and Clarity and Ease of Response Ratings

Item #	Item	Expected Factor ¹²	Clarity ³		Ease of Response	
			Mean ⁴	SE(m)	Mean ⁵	SE(m)
88	I would rather complete parts of several projects every day than complete an entire project	4	2.50	0.142	2.40	0.123
89	To get the job done, it is important for me to do the tasks in a specific order		2.53	0.142	2.60	0.103
90	I can perform my tasks in any order and still get the job done (-)	4	2.80	0.088	2.73	0.095
91	I prefer to give each task my full attention	4	2.63	0.112	2.50	0.115
92	I prefer to save time by multitasking	4	2.97	0.033	2.57	0.114
93	I like to use my time wisely		2.97	0.033	2.63	0.089
94	I get less work done if I try to multitask	4	2.97	0.033	2.23	0.157
95	I prefer to work on several activities at a given time	4	2.87	0.079	2.10	0.139
96	Co-workers who are too friendly disrupt the work process		2.73	0.095	2.13	0.142
97	I can easily switch from one task to another without losing my place	4	2.73	0.095	2.63	0.102
98	I like to leave at the end of the day without worrying about work		2.77	0.079	2.17	0.145
99	I don't like to get work related calls when I am off work (such as nights and weekends) (-)	5	2.83	0.069	2.17	0.128
100	When I go on vacation, I like for my boss to know how to reach me	5	2.87	0.063	2.33	0.130
101	I like to stay late to finish my work	5	2.80	0.088	2.70	0.109
102	I am eager to leave work to spend time with my family (-)	5	2.90	0.056	2.70	0.085
103	I like to always take a full break for lunch (-)	5	2.87	0.079	2.23	0.141
104	I prefer to work through lunch	5	2.93	0.046	2.43	0.114

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Table 4 (continued)

Complete Item List with Content Validity Evidence and Clarity and Ease of Response Ratings

Item #	Item	Expected Factor ¹²	Clarity ³		Ease of Response	
			Mean ⁴	SE(m)	Mean ⁵	SE(m)
105	I need at least three weeks of vacation per year (-)	5	2.87	0.063	2.20	0.130
106	I am a workaholic	5	2.90	0.056	2.63	0.102
107	Family is more important to me than work (-)	5	2.83	0.084	2.57	0.104
108	It is important to me to have a good number of vacation days (-)	5	2.87	0.079	2.73	0.082
109	Leisure time is more important than work time	5	2.70	0.109	2.60	0.113
110	I need to spend time away from work sometimes (-)	5	2.77	0.092	2.33	0.138
111	I usually do work on my days off	5	2.73	0.106	2.37	0.122
112	People have accused me of working too hard		2.83	0.069	2.33	0.138
113	I prefer to take work home with me	5	2.83	0.069	2.77	0.104
114	I prefer to finish my work by the end of each day (-)	5	2.83	0.069	2.50	0.133
115	Time away from work is important to me	5	2.83	0.069	2.47	0.133
116	I view time away from work as a luxury	5	2.90	0.056	2.50	0.133
117	I like to have time to take breaks during the day		2.80	0.074	2.50	0.115
1	I expect others to work very fast	6	2.69	0.083	2.28	0.103
2	Working fast is not important to me		2.84	0.065	2.53	0.100
3	I like a work environment that is fast paced	6	2.81	0.070	2.47	0.119

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Table 4 (continued)

Complete Item List with Content Validity Evidence and Clarity and Ease of Response Ratings

Item #	Item	Expected Factor ¹²	Clarity ³		Ease of Response	
			Mean ⁴	SE(m)	Mean ⁵	SE(m)
4	I like to make decisions on the spur of the moment		2.78	0.074	2.34	0.124
5	I can get my work done even when the people around me cannot		2.69	0.095	2.38	0.117
6	I prefer to work the same number of hours as my fellow workers, no matter what our job is		2.59	0.099	2.06	0.134
7	I like to relax at work	9	2.78	0.087	2.44	0.127
8	I hate to waste time	9	2.91	0.052	2.53	0.119
9	I tend to lose track of time at work		2.72	0.081	2.31	0.130
10	I like to push myself to work very fast	6	2.66	0.096	2.25	0.135
11	I like to work at my own pace (-)	6	2.84	0.065	2.56	0.089
12	When I'm having a good time, hours can fly by (-)	9	2.69	0.095	2.72	0.081
13	It bothers me if people rush me at work (-)	10	2.75	0.078	2.56	0.118
14	I rush to finish tasks so I can move on to the next one	10	2.72	0.081	2.19	0.138
15	I take my time to complete a task (-)	10	2.75	0.100	2.53	0.090
16	I sometimes finish people's sentences if they are taking too long	7	2.72	0.092	2.31	0.138

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Table 4 (continued)

Complete Item List with Content Validity Evidence and Clarity and Ease of Response Ratings

Item #	Item	Expected Factor ¹²	Clarity ³		Ease of Response	
			Mean ⁴	SE(m)	Mean ⁵	SE(m)
17	I get impatient if people move too slowly at work		2.81	0.070	2.38	0.117
18	I like to think before I make a comment (-)	7	2.78	0.074	2.44	0.118
19	It's rude not to respond to comments at meetings	7	2.31	0.130	1.97	0.131
20	Suggestions are always on the tip of my tongue		2.47	0.127	2.16	0.120
21	If there was a long silence at meeting after I made a comment, I would feel uncomfortable	7	2.59	0.109	2.28	0.129
22	If a comment I made was met with silence, it would show people were thinking about what I said (-)	7	2.38	0.125	1.97	0.123
23	I hate when I can't get a quick answer to a question	7	2.69	0.083	2.28	0.136
24	I expect others to work very fast (duplicate)	6	2.72	0.081	2.34	0.115
25	I prefer to let other people talk during meetings		2.81	0.083	2.22	0.125
26	I feel the need to speak if there is silence at a meeting	7	2.75	0.078	2.13	0.133
27	I don't like long periods of silence during meetings	7	2.84	0.079	2.31	0.145
28	I like to think about my past accomplishments at work (-)	8	2.72	0.092	2.16	0.136
29	I often think about my future at work	8	2.75	0.090	2.44	0.118
30	I am more concerned about my work for this month than for next year (-)	8	2.53	0.110	2.16	0.136

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Item #	Item	Expected Factor ¹²	Clarity ³		Ease of Response	
			Mean ⁴	SE(m)	Mean ⁵	SE(m)
31	I like to talk about the “good old days” (-)	8	2.66	0.106	2.06	0.148
32	Planning for the future is important to me	8	2.81	0.070	2.72	0.092
33	I like to change jobs often		2.63	0.098	1.63	0.125
34	I prefer to work at one place for a long time		2.63	0.098	2.31	0.122
35	I prefer people to “get to the point”	6	2.66	0.115	2.56	0.118
36	I like to help others in order to enhance future relationships	8	2.56	0.118	2.44	0.118
37	I enjoy learning about how things used to be done at work (-)	8	2.38	0.133	2.22	0.125
38	I prefer to do things as they have been done in the past (-)	8	2.66	0.106	2.16	0.120
39	I like to invest time in the future	8	2.38	0.133	2.22	0.133
40	My job is very important to me		2.88	0.059	2.72	0.092
41	I prefer to make quick decisions on less important issues	10	2.44	0.118	2.34	0.096
42	I prefer to spend more time on important tasks (-)	10	2.75	0.090	2.72	0.081
43	The amount of time I devote to a task signifies its importance (-)	10	2.78	0.074	2.34	0.124
44	Time is valuable	9	2.66	0.115	2.75	0.090
45	I like to delegate work to save time		2.66	0.085	2.34	0.106

¹ Based on Subject Matter Expert (SME) assignments with 75% agreement or more. When no number appears, item was not assigned to any factor.

² Four SMEs rated the Pace items, and four rated the flexibility items.

³ 31 students rated the Pace items and 32 students read the Flexibility items.

⁴ Measured on 3-point scale, with higher ratings indicating higher clarity.

⁵ Measured on 3-point scale, with higher ratings indicating higher ease of response.

Table 4 (continued)

Complete Item List with Content Validity Evidence and Clarity and Ease of Response Ratings

Item #	Item	Expected Factor ¹²	Clarity ³		Ease of Response	
			Mean ⁴	SE(m)	Mean ⁵	SE(m)
46	I like to invest in things that can save me time at work	9	2.56	0.118	2.44	0.127
47	I prefer to be paid by the task rather than by the hour		2.69	0.114	2.03	0.159
48	It does not bother me when my boss is late (-)	9	2.75	0.090	2.31	0.158
49	Time is a precious resource	9	2.59	0.099	2.66	0.096
50	I like to take my time when making an important decision (-)	10	2.84	0.065	2.69	0.083
51	I wait until the last minute to complete tasks		2.78	0.087	2.16	0.143
52	Time seems to slip away when I am at work (-)	9	2.50	0.119	2.28	0.121
53	I feel like there is never enough time to get everything done		2.69	0.083	2.25	0.127
54	Doing things right is better than doing things fast (-)	10	2.69	0.114	2.53	0.119
55	It is better to make a bad decision quickly, than a good decision slowly	10	2.41	0.126	1.97	0.159
56	I never seem to have enough time to get everything done		2.72	0.103	2.44	0.118
57	I do not like to think about how I use my time		2.59	0.099	2.00	0.127
58	I worry about using my time well	9	2.50	0.119	2.13	0.133

¹ Based on Subject Matter Expert (SME) assignments with 75% agreement or more. When no number appears, item was not assigned to any factor.

² Four SMEs rated the Pace items, and four rated the flexibility items.

³ 31 students rated the Pace items and 32 students read the Flexibility items.

⁴ Measured on 3-point scale, with higher ratings indicating higher clarity.

⁵ Measured on 3-point scale, with higher ratings indicating higher ease of response.

Table 4 (continued)

Complete Item List with Content Validity Evidence and Clarity and Ease of Response Ratings

Item #	Item	Expected Factor ¹²	Clarity ³		Ease of Response	
			Mean ⁴	SE(m)	Mean ⁵	SE(m)
59	I do not worry about using my time well (-)	9	2.47	0.119	2.00	0.135
60	I expect others to know how long it will take to do something		2.25	0.149	2.00	0.135
61	I like to have the freedom to use my time the way I choose		2.74	0.080	2.52	0.122
62	I expect to “kill time” on the job (-)	9	2.48	0.138	2.06	0.146
63	To get the job done, it is important for me to coordinate my work with others		2.71	0.095	2.55	0.102
64	Teamwork is not very important to me		2.81	0.086	2.16	0.161
65	I feel that deadlines do not really matter		2.74	0.103	1.90	0.156
66	It is important for me to meet my deadlines		2.74	0.092	2.84	0.082
67	I do not get upset when I miss a deadline		2.74	0.092	2.06	0.153
68	I prefer to do most of my work under deadlines		2.71	0.095	2.55	0.102
69	I always feel like I have plenty of time		2.68	0.097	2.16	0.132
70	I prefer to finish a task before it is due		2.77	0.101	2.65	0.109

¹ Based on Subject Matter Expert (SME) assignments with 75% agreement or more. When no number appears, item was not assigned to any factor.

² Four SMEs rated the Pace items, and four rated the flexibility items.

³ 31 students rated the Pace items and 32 students read the Flexibility items.

⁴ Measured on 3-point scale, with higher ratings indicating higher clarity.

⁵ Measured on 3-point scale, with higher ratings indicating higher ease of response.

Table 4 (continued)

Complete Item List with Content Validity Evidence and Clarity and Ease of Response Ratings

Item #	Item	Expected Factor ¹²	Clarity ³		Ease of Response	
			Mean ⁴	SE(m)	Mean ⁵	SE(m)
71	I like to make time to review my work		2.81	0.086	2.48	0.112
72	I don't like the pressure of deadlines		2.68	0.085	2.29	0.124
73	I like to be the first one to finish a task	10	2.71	0.083	2.48	0.122
74	I like to complete tasks in a timely matter	10	2.65	0.109	2.55	0.112
75	It is better to get things done quickly than to worry over every detail	10	2.71	0.095	2.03	0.150
76	I like to juggle several activities at the same time		2.68	0.108	2.35	0.119
77	I have to work with others to get the job done		2.74	0.080	2.45	0.121
78	I work best under pressure		2.87	0.077	2.48	0.122
79	I like to have deadlines		2.87	0.061	2.65	0.087

¹ Based on Subject Matter Expert (SME) assignments with 75% agreement or more. When no number appears, item was not assigned to any factor.

² Four SMEs rated the Pace items, and four rated the flexibility items.

³ 31 students rated the Pace items and 32 students read the Flexibility items.

⁴ Measured on 3-point scale, with higher ratings indicating higher clarity.

⁵ Measured on 3-point scale, with higher ratings indicating higher ease of response.

Table 5

Standardized Factor Loadings

Item Number ⁷¹	Item Text	Schedules	Social Time	Pace	Monochronicity	Work/Leisure	Value of Time
F41b [†]	It does not bother me to be late to appointments	0.722					
F40b [†]	I do not mind being late	0.706					
F39b	I like to be on time	0.636					
F32b ^{▲■}	I get upset when I am late for work	0.627					
F33b [†]	I get upset when others are late for work	0.598					
F6a [†]	I do not pay much attention to schedules	0.581					
F4a	I prefer to do things when I am ready rather than on a schedule	0.579					
F48b [†]	I feel that appointment times are usually flexible	0.572					
F45b [†]	I feel guilty when I am late to meet someone	0.562					
F35b	I do not care what time others arrive to work	0.560					
F44b [▲]	I get irritated when people are late	0.537					
F42b [▲]	I prefer to be to an appointment early	0.537					
F21a	I don't like to plan my day around timed events	0.536					
F9a ^{†▲}	I like to take each day as it is rather than trying to plan it out	0.534					
F34b	I do not care what time I arrive for work	0.532					
F47b [†]	It is rude to be late to an appointment	0.529					

⁷¹ 'F' indicates that the item was expected to load on one of the Flexibility factors. 'P' indicates that the item was expected to load on a Pace factor.

[†] Indicates that this item was tested as part of Model 1

[▲] Indicates that this item was tested as part of Model 2

[■] Indicates that this item was tested as part of Model 3

Table 5 (continued)

Standardized Factor Loadings

Item Number ⁷¹	Item Text	Schedules	Social Time	Pace	Monochronicity	Work/Leisure	Value of Time
F7a	I like to dawdle	0.528					
F19b	I believe meeting times are flexible	0.528					
F31b	It is very important to me to be “on time” for everything	0.506					
F53b	I believe the start of a meeting is to be taken seriously	0.502					
F3a	I don’t like my schedule to be set in stone	0.494					
F69c	It is important to stay on-task” at work	0.491					
F15a ^Δ	I like to plan my time carefully	0.479					
F5a ^{Δ■}	Staying on schedule is important to me	0.477					
P8a [■]	I hate to waste time	0.474					
F37b	If I arrive an hour late for work, I will feel rushed all day	0.474					
F68c	I prefer my time at work to be “on-task”	0.468					
F18b	I like to be careful about meeting times	0.464					
P74e	I like to complete tasks in a timely matter	0.454					0.425
P48d	It does not bother me when my boss is late	0.449					
F49b	I hate waiting for people who are late	0.429					
F50b	I care if others are late returning from a meal break	0.421					
P39c	I like to invest time in the future	0.407					0.397
P29c	I often think about my future at work	0.400					
F20a	I like to plan my day down to the minute						
F22a ^Δ	I like to pay close attention to the time at work						
F46b	It is okay to miss appointments						
F36b	I care if I am late returning from a meal break						
F28b ^Δ	I prefer not to have a set schedule during a big project						
F23b	Appointments have priority						

Table 5 (continued)

Standardized Factor Loadings

Item Number ⁷¹	Item Text	Schedules	Social Time	Pace	Monochronicity	Work/Leisure	Value of Time
F52b ^Δ	I would feel the need to apologize if I were more than five minutes late for a meeting						
P18b ^Δ	I like to think before I make a comment						
F86d [†]	I prefer to do one thing at a time		0.827				
F83d [†]	I prefer to complete one task before beginning another		0.769				
F88d [†]	I would rather complete parts of several projects every day than complete an entire project		0.713				
F78d [■]	I prefer to focus on one thing at a time		0.706				
F80d	I would rather complete an entire project every day than complete parts of several projects		0.681				
F79d	I prefer to work on one project at a time		0.665				
F84d [†]	I believe it is best for people to be given several tasks and assignments to perform		0.625				
F82d ^{†Δ}	I believe people do their best work when they have many tasks to complete		0.594				
F85d	I am comfortable doing many tasks at once		0.568				
F81d ^Δ	I believe people should try to do many things at once		0.526				
F90d ^{†Δ■}	I can perform my tasks in any order and still get the job done		0.420				
P24e [†]	I expect others to work very fast			0.810			
P1a ^Δ	I expect to work very fast			0.791			
P10a [†]	I like to push myself to work very fast			0.689			
P3a ^{†Δ■}	I like a work environment that is fast paced			0.605			
P14e ^{†■}	I rush to finish tasks so I can move on to the next one			0.569			
P35a ^{†Δ}	I prefer people to “get to the point”			0.454			
P73e ^{Δ■}	I like to be the first one to finish a task			0.430			
P23b ^{Δ■}	I hate when I can't get a quick answer to a question						

Table 5 (continued)

Standardized Factor Loadings

Item Number ⁷¹	Item Text	Schedules	Social Time	Pace	Monochronicity	Work/Leisure	Value of Time
P43e	The amount of time I devote to a task signifies its importance						
P28c	I like to think about my past accomplishments at work						
F58c [†]	I like socializing to be a large part of my work day				0.719		
F54c [†]	It is important that I have time at work to socialize				0.646		
F57c ^Δ	I do not like to socialize at work				0.629		
F56c ^{†■}	I like my business and social activities to mix				0.592		
F59c	I like to take many breaks in order to socialize				0.515		
F71c ^{†Δ}	I believe talking with coworkers wastes time				0.508		
F74c [†]	I get annoyed when people discuss personal matters at work				0.487		
P7a	I like to relax at work				0.442		
F60c	I like to spend most of my day on task rather than socializing				0.418		
F63c	I prefer to socialize when I am on a break				0.402		
F61c ^Δ	I prefer to work alone				0.396		
F73c ^Δ	Co-workers who are too friendly disrupt the work process						
P31c	I like to talk about the “good old days”						
F111e [†]	I usually do work on my days off					0.603	
F100e ^{†Δ}	When I go on vacation, I like for my boss to know how to reach me					0.571	
F55e [†]	I look forward to time away from work					0.561	
F64c ^Δ	I like to work on my break					0.558	
F104e [†]	I prefer to work through lunch					0.511	
F106e ^Δ	I am a workaholic			0.393		0.482	
F65c	I prefer to think about work on my break					0.476	
F113e	I prefer to take work home with me					0.460	
F99e ^Δ	I don't like to get work related calls when I am off work (such as					0.449	

Table 5 (continued)

Standardized Factor Loadings

Item Number ⁷¹	Item Text	Schedules	Social Time	Pace	Monochronicity	Work/Leisure	Value of Time
	nights and weekends)						
F103e	I like to always take a full break for lunch					0.438	
F102e [†]	I am eager to leave work to spend time with my family					0.433	
F101e ^{†Δ}	I like to stay late to finish my work					0.430	
F108e	It is important to me to have a good number of vacation days						
F109e	Leisure time is more important than work time						
P49d ^{†Δ}	Time is a precious resource						0.637
P44d ^{†Δ■}	Time is valuable						0.616
P32c ^Δ	Planning for the future is important to me						0.498
P55e [†]	It is better to make a bad decision quickly, than a good decision slowly						0.478
P42e [†]	I prefer to spend more time on important tasks						0.474
P12d	When I'm having a good time, hours can fly by						0.436
P62d ^Δ	I expect to "kill time" on the job						0.395
P75e [■]	It is better to get things done quickly than to worry over every detail						
P54e ^Δ	Doing things right is better than doing things fast						
F110e	I need to spend time away from work sometimes						

Table 6

List of Discarded Items and Factors

Item	Item Text	7	8	9
P27b	I don't like long periods of silence during meetings	0.441		
P30c [△]	I am more concerned about my work for this month than for next year	0.434		
P26b ^{△▪}	I feel the need to speak if there is silence at a meeting	0.418		
P11a [△]	I like to work at my own pace	0.407		
P37c [△]	I enjoy learning about how things used to be done at work	0.401		
P13e	It bothers me if people rush me at work			
P21b	If there was a long silence at meeting after I made a comment, I would feel uncomfortable			
F107e	Family is more important to me than work			
P19b	It's rude not to respond to comments at meetings			
F116e [△]	I view time away from work as a luxury			
F62c [△]	I like to take time to help others with their work		0.579	
F24a ^{△▪}	I like my day to flow from one event to another		0.479	
F67c	I like to finish my work before I take a break		0.440	
P46d [△]	I like to invest in things that can save me time at work		0.434	
F105e ^{△▪}	I need at least three weeks of vacation per year		0.429	
F77d [△]	Once I start a task I prefer to persist until I have completed it		0.412	
P58d [△]	I worry about using my time well		0.399	
F25b	I like to set my watch ahead of time			
P36c	I like to help others in order to enhance future relationships			
P22b [△]	If a comment I made was met with silence, it would show people were thinking about what I said			
P15e	I take my time to complete a task			-0.391
F11a	I like my day to be planned around events			
P16b [△]	I sometimes finish people's sentences if they are taking too long			

[†] Indicates that this item was tested as part of Model 1

[△] Indicates that this item was tested as part of Model 2

[▪] Indicates that this item was tested as part of Model 3

Table 6 (continued)

List of Discarded Items and Factors

Item	Item Text	7	8	9
F26b [■]	It is important to me that my clock is accurate			
P41e	I prefer to make quick decisions on less important issues			
P50e [△]	I like to take my time when making an important decision			
F114e	I prefer to finish my work by the end of each day			
P38c [△]	I prefer to do things as they have been done in the past			

Table 7

Fit indices for confirmatory factor analysis

	Model 1: six factors	Model 2: ten factors	Model 3: two factors
X^2 goodness of fit	1047.64	2136.53	260.19
<i>Df</i>	545	1014	103
<i>P</i>	<.001	<.0001	<.001
Comparative Fit Index (CFI)	.77	.53	.57
Non-Normed Fit Index (NNFI)	.75	.50	.51
Goodness of Fit Index (GFI)	.83	.75	.90
RMSEA	.055	.065	.072
(90%CI)	(.050,.060)	(.062, .069)	(.068,.076)
Root Mean Square Residual (RMR)	.073	.085	.072

Table 8

Factor Correlation Matrix (six-factor model)

	M	SD	1	2	3	4	5	6
1. Schedules	3.14	0.31	--					
2. Monochronicity	3.02	0.46	.14*	--				
3. Task/Social Time	2.59	0.59	.04	-.28*	--			
4. Work/Leisure Time	2.29	0.55	.10	.09	-.08	--		
5. Value of Time	3.12	0.58	.04	-.11	.14	.12	--	
6. Pace	3.58	0.36	.34*	.07	-.05	-.05	-.25*	--

Note: '*' indicates that the correlation is significant at $\alpha = .05$.

Table 9

Multitrait Matrix (listwise n = 553)

	Mean	SD	1. Schedules	2. Monochronicity	3. Task/Social Time	4. Work/Leisure Time	5. Pace	6. Value of Time	7. Self-Discipline	8. Friendliness	9. Immoderation	10. Orderliness	11. Self-Consciousness	12. Achievement	13. Activity level	14. Cautiousness	15. Collectivism	16. GPA	
1.	2.16	.49	1.00																
2.	3.25	.34	.00	1.00															
3.	2.87	.42	.13*	.03	1.00														
4.	3.00	.42	.10*	-.11	.16*	1.00													
5.	3.12	.58	-.10*	-.26*	-.04	.04	1.00												
6.	3.11	.32	.02	.06	.02	-.09	.14*	1.00											
7.	3.13	.33	.25	-.05	.06	.10	-.04	.16*	1.00										
8.	3.75	.55	.02	-.09	-.26*	-.14*	-.00	.18*	.22*	1.00									
9.	3.01	.52	.08	.06	.11*	.06	-.12*	.04	.24*	.05	1.00								
10.	2.85	.34	-.24*	-.08	-.11*	-.07	.09	-.13*	-.50*	-.14*	-.33*	1.00							

Table 9 (continued)

Multitrait Matrix (listwise n = 553)

	Mean	SD	1. Schedules	2. Monochronicity	3. Task/Social Time	4. Work/Leisure Time	5. Pace	6. Value of Time	7. Self-Discipline	8. Friendliness	9. Immoderation	10. Orderliness	11. Self-Consciousness	12. Achievement	13. Activity level	14. Cautiousness	15. Collectivism	16. GPA
11.	2.92	.31	-.13*	.03	-.03	-.06	.09	-.09	-.43*	-.28*	-.30*	.47*	1.00					
12.	2.66	.30	-.18*	-.07	-.05	-.02	0.32*	.03	-.09	-.01	-.19*	.15*	.11*	1.00				
13.	2.73	.33	-.26*	.17*	-.15*	-.17*	-.14*	-.19*	-.36*	-.19*	-.24*	.37*	.27*	.09	1.00			
14.	2.63	.26	-.14*	-.18*	-.16*	-.15*	-.06	-.12*	-.22*	-.07	-.09	.26*	.17*	-.04	0.21	1.00		
15.	2.81	.43	.03	-.02	-.24*	-.07	-.16*	-.19*	.06	.06	-.06	.14*	.06	-.19*	.24*	.28*	1.00	
16.	3.3 [†]	--	.14**	.02	.01	-.07	.04	.00	.03	.05	.05	-.08	.05	-.04	-.11*	-.05	-.04	1.00

[†] This item was measured using an 11 point categorical scale with .25 GPA-point increments. The values indicated in the table are the median and the Spearman correlations.

* correlation is significant at $p = .01$.

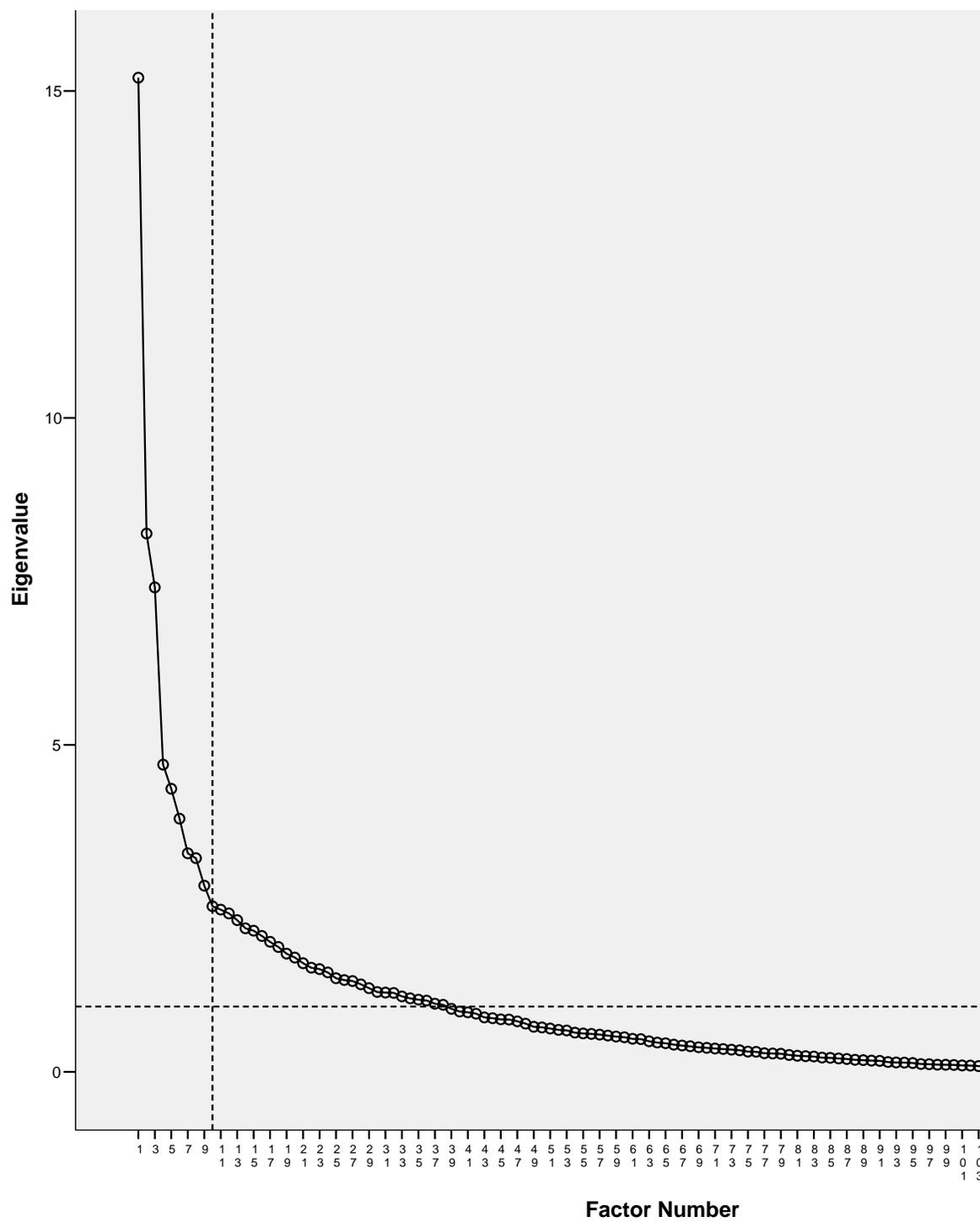
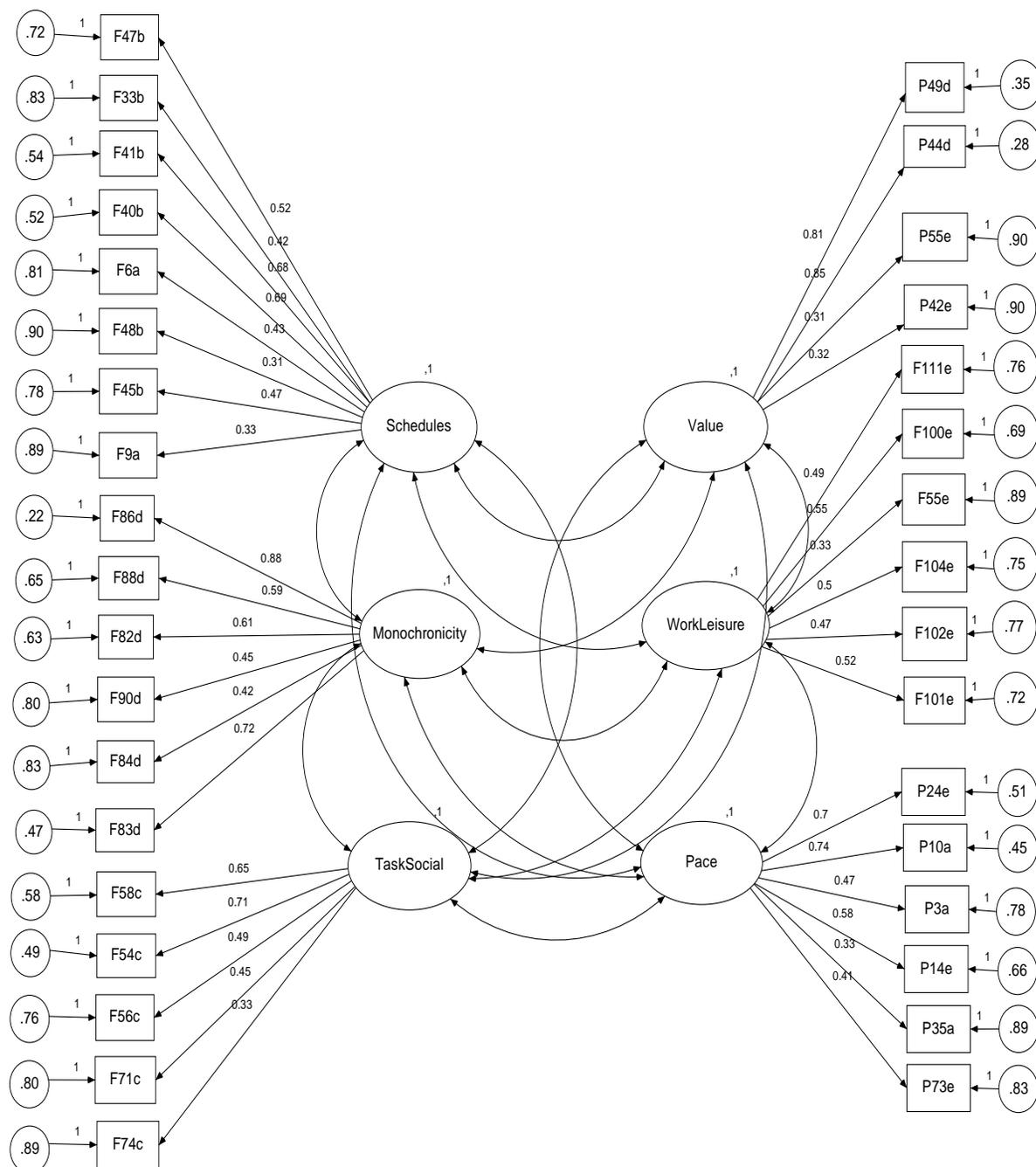


Figure 1: Scree plot from exploratory factor analysis



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Figure 2: Factor Loadings and Conceptual Model

⁷² Circles represent error terms.

⁷³ Single-headed arrows from constructs to observed variables represent factor loadings.