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Model of Social Well-being Based on Horizontal and Vertical Individualism-Collectivism: Intermediary Role of Social Problem-Solving

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The present study aims to show to what extent horizontal and vertical individualism and-collectivism tendencies predict social well-being, with the intermediary role of social problem-solving. For this purpose, 377 students from universities located in the capital cities of the western provinces in Iran were selected through the multistage sampling method. The Horizontal and Vertical Individualism and Collectivism (Triandis, 1998), the Social Well-Being (Keyes, 2004), and the Social Problem-solving Ability (D'Zurilla et al., 2002) questionnaires were applied in this study. The analysis of the data, based on the formation of the causal model in the Smart PLS 3.2.8 software, shows that the general model of the project matches our data. The results of the validity and reliability factors of the external model are optimal. In the internal model, collinearity criteria, the amounts of t, F2, and Q2 are acceptable. Also, the coefficient of determination (R2) of efficient problem-solving (50.3%), inefficient problem-solving (48.3%), and social well-being (68.2%) were obtained at appropriate levels. In addition, the results reveal that

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horizontal and vertical individualism and collectivism predict social well-being through social problem-solving ability both directly and indirectly. But the horizontal collectivism does not significantly affect social problem-solving ability. Moreover, the direct relationship of efficient and inefficient problem-solving on social well-being is all meaningful (P≤.01). Finally, the analysis of the MIPA indicates that the highest performance and importance are related to the horizontal individualism variable (69.250) and efficient problem-solving (.299), which is indicative of the implicit applicability of these results.

Keywords: social problem-solving (efficient & inefficient), horizontal and vertical individualism-collectivism, social well-being

Human well-being is commonly thought of as a unifying concept with features of objective and subjective factors that make up health and quality of life (Stiglitz, Sen & Fitoussi 2009; Lampridis & Papastylianou, 2017). A major component of individuals' general well-being is their social well-being, which has been conceptualized in different respects by the World Health Organization (1979) (OECD, 2011). Social well-being can be defined as individuals' understanding of their conditions and functioning in society, resulting from interacting with both individuals and society (Keyes, 2004; Moliner, Alegre, Cabedo & Chiva, 2020). It entails five components: social coherence (i.e., society and its different institutions constitute a whole, aimed at promoting well-being for all members of society), social acceptance (i.e., thinking positively about others and accepting them with all their human characteristics), social contribution (i.e., believing that every single individual can play a role in society), social actualization (i.e., thinking positively about society and its development, and believing that the development of society can be achieved through efforts by members of the

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society), and social integration (i.e., feeling of belonging to the society and feeling that one is supported by different groups and communities in the society (Keyes, 1998; Mouratidis, 2018).

Keyes (1998) believes that the benefits of social life can serve as the basis for development of social well-being. He highlights social integration, a feeling of belonging, interdependence, collective consciousness, and collective fate as the main benefits of social life. Regarding the best way to assess social well-being, Keyes is in favor of the individual approach and views social well-being as "the appraisal of one's circumstance and functioning in society" (p. 122). Also, Rhodes, Cordie, and Wooten (2019) believe that communities prosper if individuals work together in an organized way and employ their collective knowledge and resources to attain shared goals. Therefore, the well-being of a society or community is the result of the skills, abilities and organization of these skills and abilities with the aim of carrying out life-related and work-related tasks. It is also directly influenced by how willing individuals are to share their knowledge and skills with others in society. Hashemi et al., (2016), trying to find a suitable model to represent the societal context of social well-being in Iran, selected some specific criteria and developed a compound model, focusing on both individual (micro) measures and societal (macro) measures. They highlighted some societal and individual determinants affecting social health and argued that social health, in turn, has an impact on different aspects of society. Han, Jun and Kim (2019) studied the relationship between being a member of an online community and social well-being in South Korea and concluded that when individuals feel they are more efficient as a group, online community engagement has a positive impact on social well-being. Thus, it can be claimed that social well-being is dependent

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on social duties faced by individuals in the context of social structures of the society; therefore, the pattern of cultural values can play an important part in the development of social well-being.

Culture can be defined as a system of shared meanings, beliefs, and practices that shape how individuals experience their social and physical environment and interact with it (Triandis, 2001). Cultural values represent shared standards and values and the main modes characterizing a specific groupsuch as a societyat a specific time. They are formed and developed because of how institutions, entities, and relationships are arranged in a society (Kitayama, 2002; Lampridis & Papastylianou, 2017). It should be noted that culture on its own cannot shape the behavior of individuals because individuals might follow these values in different ways (Oyserman, Coon & Kemmelmeier, 2002). In studies on cross-cultural psychology, some empirical aspects have been established regarding the differences among diverse cultural groups. Individualismand collectivism (I–C) is important ways to indicate cultural differences and similarities and a huge body of cross-cultural research studies has focused on this. However, it is far from clear as to what constitutes individualism and collectivism and how it can be best assessed (Oyserman et al., 2002; Jarolmen, 2020). Cultural groups highlight individualism and collectivism as two important dimensions, of which the first one indicates the importance they attach to the independent and autonomous self and the latter shows how important harmony of the group is to them (Triandis & Gelfand, 1998; Triandis, 2001, 2004) .

Individualism reflects a model of psychology in which more importance is attached to individual needs over group needs,

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individual rights over group rights, and individual identity over group identity (Hofstede & Bond, 1984; Ting-Toomey & Chung, 2012). This common cultural pattern dominates most northern and western European countries as well as North America (Triandis & Gelfand, 1998) including Canada (Borden, 1991; Ting-Toomey & Chung, 2012). On the contrary, collectivism denotes the cultural values, views, and behavior of people in Asia, Africa, Latin America (Hsu, 1971; Neuliep, 2012), and Arab societies (Martin & Nakyama, 2010). In collectivism, group harmony is prioritized over interests of individuals (Mann, Radford & Kanagawa, 1985), and interdependence and collaboration among members of different groups are given more importance (Borden, 1991; Ting-Toomey & Chung, 2012).

Since there are similarities and differences between individualistic cultures, as well as between collectivistic cultures (Yi, 2018), understanding cultural characteristics and the individualism and collectivism dichotomy can help us understand how much importance different cultural groups attach to equality (i.e., horizontality) compared to hierarchy (i.e., verticality), (Singelis et al., 1995; Triandis & Gelfand, 1998). Individuals in horizontal individualistic societies (with self being considered equal to others) usually find themselves equal in status to others and at the same time independent from them. However, in vertical individualistic societies (with self being of greater importance and different from others), individuals mostly find themselves in competition with others, where rivalry and victory are of importance. Individuals in horizontal collectivistic settings (where self is a member of an in-group and similar to others) regard themselves as equal to others and dependent on one another, while those in vertical collectivistic societies (self is a member of an in-group but different from others) generally find

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authority of great importance and worthy of respect (Lampridis & Papastylianou, 2017). This typology illustrates the major differences in social structures and interactions within and across cultures (Sivadas, Bruvold, and Nelson, 2008).

In their study on the relationship between social well-being and individual values, Ka'abe, Khaghanifard & Hakami (2017) found that only social acceptance has a significant association with horizontal individualism. Furthermore, all social aspects have a significant relationship with vertical collectivism, and coherence, integration, and contribution are positively associated with vertical collectivism. Also, evidence reveals that variations can be detected in personal cultural inclinations in cultural groups, and within the same context different dimensions can co-exist (Green, Deschamps, and Paez, 2005); and as a consequence of constant changes and complexities in society, individuals might face various problems, making problem-solving a vital skill in modern life (Johnson et al., 2014).

Problem-solving is defined as target-oriented actions aimed at developing or finding efficient solutions for problems individuals face in their everyday life (Jean & Lachance, 2015). Social problem-solving is a robust construct in clinical psychology. Problem orientation can be defined as the way individuals think or feel about problems as well as their problem-solving ability, which can be divided into two types: positive problem orientation (viewing problems as solvable and opportunities for personal growth) and negative problem orientation (being unsure about personal problem-solving ability and seeing problems as serious threats to well-being) (D'Zurilla & Nezu, 2010). Social problem-solving theory asserts that three problem-solving styles, regardless of their orientations, can determine an individual's

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approach towards problems; these styles are the rational problem-solving style (a constructive problem-solving approach that systematically produces solutions and decision-making), the impulsive/careless style (an approach to make hasty attempts to solve problems), and the avoidant style (an approach characterized by procrastination, passivity, and inaction) (Bell & D'Zurilla, 2009; Cheng, Lau & Chan, 2014). Two studies (Guo, Yao, Wang, Yan & Zongal., 2016; McDonald & Dominguez, 2015) showed that service learning provides college students with favorable opportunities to develop, share, and employ knowledge in real contexts to promote their cognitive and social development. Highly motivated students usually improve their problem-solving ability in order to be prepared for future volunteer activities. Social problem-solving abilities can help reduce depression and stress (Smith et al., 2017). Adopting an interdisciplinary approach, the present study examines social well-being, and more specifically it focuses on cultural values and social problem-solving ability, which is of a social-individual nature. This research embarked on a new path to study these variables and aimed to test the initial model (figure 1) of the association between cultural values and social well-being with the intermediary role of social problem-solving ability in a community of students in the provincial capitals in western Iran.

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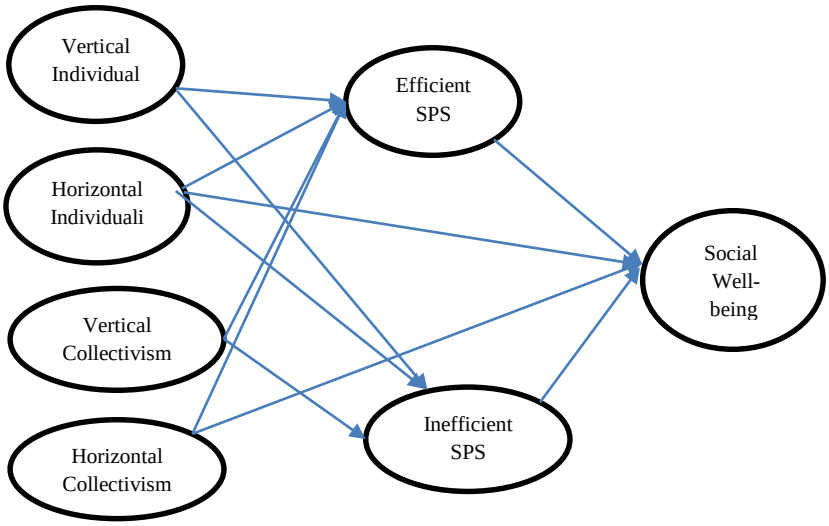


Figure 1. Suggested model

Method

This study, which is of the applied research type, employs a descriptive correlational methodology and a data-oriented model to examine the relationship between predictor, criterion, and mediator variables and the variance-based structural equations method. Since in the partial least squares method, the proposed sample size is based on the OLS regression characteristics, the sample size in the present study was determined through the power analysis of a section of the model with the largest number of predictor variables (the emotional atmosphere of the family, constructive problem-solving, and inefficient problem-solving as predictor variables and social well-being as the criterion variable). Considering the three predictor variables, a confidence interval of 99% ($\alpha = .01$), the statistical power of 90% ($\beta = 0.10$) and the least effect size ($R^2 = .05$), the SPSS Sample Power

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software was used to determine the smallest sample size, which was calculated to be 377 people. Having in mind the possibility of unreturned or invalid questionnaires, an extra 5% was considered and 400 questionnaires were distributed. Invalid questionnaires were excluded and eventually 377 ones were chosen for the final analysis. The research population includes all students in four different provincial capital cities in western Iran. The sample was selected according to multi-stage random cluster in the academic year of 2019. Tabriz University (N=162), Bu-Ali Sina University (N=94), Razi University (N=80) and University of Kurdistan (N=64) were randomly selected. In each one of the selected universities, two departments were chosen, in which two fields were marked for sampling; finally, one class in each of these fields was selected. The combined population of these four universities was 59200, and the statistical sample of each university was selected based on the number of its students.

Instruments

Social Well-Being

A 20-item questionnaire designed by Keyes (2004), who based this questionnaire on his theoretical model of social well-being, and he conducted two studies on two samples of 374 and 2887 people in the US to examine the psychometric properties of the characteristics of the scale. Through a confirmatory factor analysis of the five-dimensional model used in the questionnaire, he validated it experimentally. The Cronbach's alpha coefficients of social coherence, social acceptance, social contribution, social actualization, and social integration were .81, .77, .69, .80 and .75, respectively, and for the whole test it was .80. Using Cronbach's alpha factor analysis, Farsinezhad (2009) calculated the subscale of social well-being in this questionnaire to be .78. In a shortened

form of this questionnaire, Babapour et al. (2010) used internal consistency to study the validity of this tool; the reliability of Cronbach's alpha for each of these subscales, in the same order mentioned above, was .71. .74, .74, .70 and .77, and for the whole scale it was 0.73. Similarly, in the present study, the reliability of these subscales, that is social coherence, social acceptance, social contribution, social actualization, and social integration was .71, .72, .69, .63 and .71 respectively, and for the whole test it was .88. The answers ranged from very low (1) to very high (5). The maximum score of these questions is 100, showing the degree of individuals' social well-being. Scores of 20 to 46, 47 to 74, and 75 to 100 respectively, express low, medium, and high social well-being.

Social Problem-Solving (SPS)

The modified 25-question questionnaire by D'Zurilla et al. (2002) is a self-report tool used for measuring social problem-solving skill. The answers range from very low (1) to very high (5). It measured five different dimensions of the social problem-solving models. The subscales of the questionnaire included positive problem-solving orientation, negative problem-solving orientation, logical problem-solving, impulsive/careless style, and avoidant style. Subscales of positive problem-solving orientation and logical problem solving were considered as efficient problem-solving and were scored positively. The other subscales, i.e., impulsive/careless style, avoidant style, and negative problem-solving orientation constituted inefficient problem-solving and were negatively scored. Therefore, in this questionnaire, regarding positive social problem-solving orientation and logical problem-solving, constructive social

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problem-solving ability is shown by high scores, while in negative social problem-solving orientation, avoidant style, and impulsive/careless style, it is indicated by low scores. The test-retest reliability for this questionnaire was reported to be between .68 and .91, and its Cronbach's alpha coefficient was between .69 and .95. Its construct validity was confirmed using exploratory factor analysis and consistency with other scales of social problem-solving and overlapping psychological constructs (D'Zurilla et al. 2002). In Iran, Mokhberi et al. (2011) calculated a Cronbach's alpha coefficient of .85 for these five factors and a test-retest reliability coefficient of .88 for the shortened social problem-solving questionnaire. Also, the reliability coefficient of these factors in the present study was between .52 and .64. The overall score of this questionnaire is 125; scores of 25 to 50, 50 to 75, and over 75 respectively, represented low, medium, and high social problem-solving ability of the participants.

The Horizontal and Vertical Individualism and Collectivism Scale (HVIC)

The HVIC, developed by Triandis & Gelfand (1998), is widely used to measure individualism and collectivism. The short 16-item HVIC consists of four subscales, each having eight items. These subscales measure vertical collectivism, vertical individualism, horizontal collectivism, and horizontal individualism. The construct validity of these variables in the United States was confirmed (e.g., Oishi et al., 1998; Triandis & Gelfand, 1998), and the response rate of the HVIC is based on a 5-point Likert-type scale (1 = highly disagree, 5 = highly agree). In the study by Singelis Triandis & Bhawuk (1995), the Cronbach's alpha coefficient for the internal consistency of this questionnaire was .86. This test was carried out by Barati, Hakim

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& Javadi (2013) in Iran, and its Cronbach's alpha coefficient was determined to be .61. Similarly, in the present study the reliability of horizontal collectivism, horizontal individualism, vertical collectivism, and vertical individualism were .73, .77, .67, and .70, respectively.

Results

Table 1 presents the sample in terms of demographic variables (education, age, marital status, and sex). As can be seen, it comprises mostly 23- to 30-year-old single, female students with a bachelor's degree.

Structural equation modeling (SEM), with the partial least squares approach, and Smart PLS software were used to investigate the model and assumptions. There are several reasons for using PLS. The main reason is the superiority of this method for small samples; another important reason is the abnormal data that researchers deal with in some studies.

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Table 1

Demographic Variables

Education	Frequency	Percentage	Valid Percentage	Cumulative Percentage	**Age**	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Associate	12	3.2	3.2	32.6	23 -18	121	32.1	32.6	3.2
Bachelor	182	48.3	48.8	66.3	30 -23	125	33.2	33.7	52.0
Master	85	22.5	22.8	86.6	35 -30	76	20.2	20.5	74.8
PhD	94	24.9	25.2	96.2	40 -35	35	9.3	9.4	100
Marital status	Frequency	Percentage	Valid Percentage	Cumulative Percentage	**Sex**	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Single	292	77.5	79.1	64.9	Female	242	64.2	64.9	79.1
Married	77	20.4	20.9	100	Male	131	34.7	35.1	100

To analyze the model, PLS Software 3.2.8 was used. In this model, a total of 61 items was included (4 horizontal individualistic values, 4 vertical individualistic values, 4 horizontal collectivistic values, 4 vertical collectivistic values, 10 efficient problem-solving, 15 inefficient problem-solving items, and 20 social well-being items). They are the individualistic values of the two components, the collectivistic values of the two components, the efficient problem-solving of the two components, the inefficient problem-solving of the three components, and the five components social well-being, all of which are reflective of the latent variables. First-order factor analysis (components as indicators) and then higher-order factor analysis (items as indicators) were performed for the components. Modeling with the partial least squares approach consists of the following three steps: fitting the measurement model, fitting the internal (structure model), fitting the general model. After confirming the criteria for each stage, the hypotheses were finally tested:

Figure 2 presents the path diagram with standard coefficients. It should be noted that due to the insignificance of the paths of the values of vertical individualism-collectivism to social well-being, these two paths were eliminated in the final model. The questionnaire items are also hidden for clarity using the software (as indicated by plus signs).

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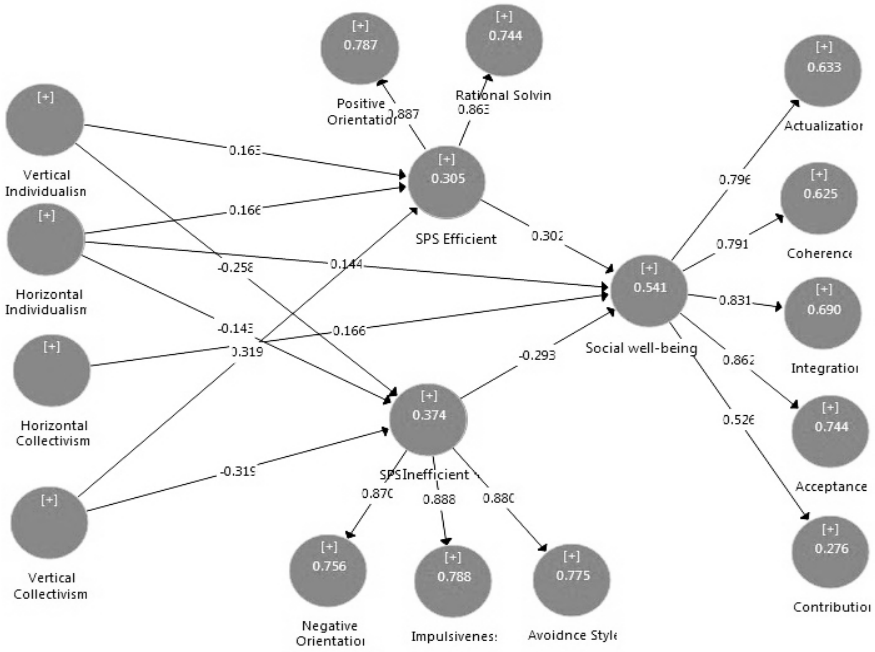


Figure 2. Path diagram with coefficients

Measurement Models

The measurement model is a tool in which the relationships between the observed and latent variables are considered and measured. To investigate the fit of the models for measuring the criteria, composite reliability coefficient (CR), average *variance* extracted (AVE) and the Fornell-Larcker matrix for divergent validity are introduced. In the reliability section, it is necessary to check the reliability of the latent variable and reagent. The reliability of the reagent was evaluated by measuring the factor loadings and the reliability of the latent variables was evaluated through the composite reliability. Reliability at the reagent level is the square of the factor loadings of the items, which should be at least .50, meaning that at least half of the variance of the index

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is explained by the latent variable. Therefore, factor loadings above .708 are desirable and loads below .40 need to be eliminated. Factor loads between .40 and .70 can be eliminated if they increase with convergent validity (AVE). (Nunnally & Bernstein, 1994). In this model, two social well-being items, three inefficient problem-solving items and two efficient problem-solving items were eliminated to increase validity. Since reflective variables are indicators of a domain and are highly correlated, it is possible to replace them as deleting one or more items does not have a significant effect on the content validity. The results show that all the preserved items have good reliability (due to the length of the table they were not presented).

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Table 2

Cronbach's Alpha Coefficient, Composite Reliability and Convergent Validity and Divergent Validity

Latent variable	Component	Composite Reliability (CR)	Convergt Validity (AVE)	CR>AVE	Convergent validity (Fornell-Larcker)			
					$\sqrt{AVE}$	The variable with the highest correlation	Correlation value	$\sqrt{AVE}$ > Correlation
Values	Horizontal Individualism	.855	.597	Ok	.773	Vertical collectivism	.567	Ok
	Vertical Individualism	.816	.527	Ok	.726	Horizontal collectivism	.613	Ok
	Horizontal Collectivism	.831	.552	Ok	.743	Vertical collectivism	.641	Ok
	Vertical Collectivism	.80	.501	Ok	.708	Horizontal collectivism	.641	Ok
Efficient Problem-Solving	Positive Orientation	.792	.560	Ok	.748	Rational problem-Ssolving	.532	Ok
	Rational Problem-Solving	.759	.514	Ok	.717	Positive orientation	.532	Ok
	Negative Orientation	.805	.579	Ok	.761	Impulsiveness style scale	.648	Ok

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Inefficient problem-solving	Impulsiveness Style Scale	.785	.549	Ok	.741	Avoidance style	.678	Ok
	Avoidance Style Scale	.798	.569	Ok	.754	Impulsiveness style scale	.679	Ok
Social Well-being	Social Actualization	.805	.581	Ok	.762	Social integration	.601	Ok
	Social Integration	.836	.630	Ok	.794	Social coherence	.618	Ok
	Social Coherence	.840	.636	Ok	.797	Social integration	.618	Ok
	Social Acceptance	.824	.501	Ok	.708	Social coherence	.651	Ok
	Social Contribution	.809	.515	Ok	.718	Social actualization	.321	Ok

Three criterions used for evaluating the fit of exterior models are the following: Firstly, Cronbach's alpha and composite reliability were used to evaluate the reliability of the latent variables. However, due to the Cronbach's alpha coefficient and the weight of all the reagents being identical, the partial least squares method is more commonly used than composite reliability (Wen Wu, 2010). Composite reliabilities between .7 and .9 are considered as satisfactory values. As shown in the table above, the value of the composite reliability coefficient is acceptable and satisfactory for all the variables examined in the study.

Secondly, convergent validity was used to compare mean variance (AVE). A value above .5 indicates the adequacy and suitability of this criterion (Lauria & Dacci, 2007). The results in Table 2 show that the AVE value is suitable for all structures. Divergent validity is the third criterion for evaluating the fit of exterior models. Divergent validity is the extent to which one construct is correctly distinguished from other constructs or empirical criteria. This validity is calculated at two levels of reagent and latent variable. At the reagent level, transverse loads are used to calculate divergent validity, which requires that the load of one corresponding construct must be more than all the reagent loads on other ones. This requirement has been met in all reagents but has not been presented due to the length of the table. At the latent variable level, the Fornell-Larcker (1981) criterion was used. Table 3 summarizes the main parts of this matrix.

To confirm the divergent validity, the square of the AVE of each variable must be more than the maximum correlation value of that variable with the other variables. The rationale behind this construct is that one construct should have more variance with its reagents than other constructs Fornell-Larcker (1981). The results in Table 2 show that all the latent variables have acceptable

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divergent validity. Therefore, they are capable of measuring latent variables of the study. So, in the following section, the internal (structural) model is investigated.

Structural Model

The structural model (Table 3) focuses on the relationships between the latent independent (intrinsic) and the dependent (extrinsic) variables and examines only the latent variables along with the relationships between them.

Collinearity Criterion (VIF)[1]

In the internal model, the relationship between the latent variables of the present study was investigated. The first criterion for investigating the internal model was to evaluate the collinearity of the variables using the variance inflation tolerance index (VIF). The tolerance level is less than .2 (VIF above 5), indicating the collinearity between the independent variables. As can be seen in the table 3, all the VIF indices of the independent variables indicate the absence of any collinearity problems in the model.

[1] variance inflation factor

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Table 3

Results of Structural and General Model Fit Criteria

Path Independent -> Dependent	β	Confidence Interval		T value	Significant level	R^2 Independent variable	Q^2 Dependent variable	f^2	VIF
		2.5 percent	97.5 percent						
Horizontal Collectivism -> Social Well-being	.166	.061	.272	3.07	.002	.541	.164	.04	1.48
SPS Efficient -> Social Well-being	.299	.192	.40	5.634	.00	.541	.164	.092	2.118
SPS Inefficient -> Social Well-being	-.296	-.392	-.197	5.945	.00	.541	.164	.087	2.214
Horizontal Individualism -> Social Well-being	.144	.055	.232	3.199	.001	.541	.164	.03	1.494
Horizontal Individualism -> SPS Efficient	.166	.049	.28	2.822	.005	.305	.116	.024	1.66
Vertical Collectivism -> SPS Efficient	.319	.175	.469	4.192	.00	.305	.116	.086	1.707
Vertical Individualism -> SPS Efficient	.163	.039	.286	2.625	.009	.305	.116	.023	1.655
Vertical Collectivism -> SPS Inefficient	-.32	-.451	-.193	4.844	.00	.374	.151	.096	1.707
Vertical Individualism -> SPS Inefficient	-.258	-.373	-.135	4.211	.00	.374	.151	.02	1.655
Horizontal Individualism -> SPS Inefficient	-.144	-.259	-.03	2.444	.015	.374	.151	.065	1.66

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Significance of Path Coefficients

Bootstrapping procedure was used to evaluate the significance of path coefficients with T values. The value of T coefficient and significance level of test among the latent variables in all the relationships was more than 1.96 and less than .05, respectively, indicating the importance of these paths and the suitability of the structural model.

f^2 Criterion

The effect size ($\boldsymbol{f^2}$) represents the change in value (R^2) after deleting a definite latent extrinsic variable from the model. This criterion determines the intensity of the relationship between constructs, the higher the value of this criterion, the greater the intensity. Cohen's (1988) values of .02, .15, and .35 indicate the magnitude of small, medium, and large impacts of one latent variable on the other latent variable, respectively. This criterion is computable for intrinsic variables that affect more than one variable; therefore, the $\boldsymbol{f^2}$ criterion is computable for the efficient problem-solving coefficient, the inefficient problem-solving, and social well-being. The results are shown in the Table 3.

R^2 Criterion

This is a criterion that measures the effect of one or more extrinsic variables on an intrinsic variable, indicating the accuracy of the model prediction. The three values of .19, .33, and .67 are considered as the criterion values for weak, medium, and strong values of R^2 (Chin, 1998). According to the results shown, in Table 3, efficient problem-solving (.305), inefficient problem-solving (.374), and social well-being (.541) were obtained at desirable and appropriate levels. The coefficient of determination

in this research reveals that 30.5% of the variance efficient problem-solving and 37.4% of the variance inefficient problem-solving are predicted by the variables of vertical individualism and collectivism and horizontal individualism, the rest of the variations depend on other factors and variables which are not considered in the model. Finally, these variables mentioned above (Horizontal and Vertical Individualism-Collectivism, Efficient Problem-Solving, Inefficient Problem-Solving) can predict 54.1% of social well-being

Q^2 Criterion

The Q^2 criterion specifies the predictive power of the model in dependent variables (Stone-Geisser, 1974). This criterion is calculated by the 'ignore procedure' where the data points in the reagents of the intrinsic variables are removed and the parameters are estimated using the residual points. A value of Q^2 more than zero for the definite intrinsic variable indicates the predictive fitness of the path model for this particular construct. According to Table 3, the Q^2 value of intrinsic efficient problem-solving (.116), inefficient problem-solving (.151), and social well-being (.164) was positive and at an appropriate level. It indicates the appropriate predictive power of the model for these variables.

As can be seen in the table above (table 4), the effects of direct, indirect, and total variables on the dependent variable are calculated directly. In addition to the above criteria, the criterion that has recently been used in some research to extend the basic findings of variance-based structural equation modeling is the Importance-Performance Matrix *Analysis* (IPMA) (Raymond and Choi, 2000). IPMA counteracts the effects of the entire internal model (importance) and the mean values of latent variables (performance) to identify areas of significance for improvement.

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The performance scale is from zero to 100, with a higher score meaning better performance, so all reagents must be in the same direction, and consequently the "efficient problem-solving" scores for the matrix estimation are reversed. Also, the horizontal individualism variable had the highest performance at 79.256, and the inefficient problem-solving variable at 72.599 had the lowest performance. Moreover, the highest importance belongs to efficient problem-solving and the least importance is that of vertical collectivism.

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Table 4

The Effect of Direct, Indirect, and Total Independent Variables on the Dependent Variables with Importance- Performance Matrix Analysis

Path Independent → Dependent	**The Effects of the Independent Variable on the Dependent**			**Importance-performance matrix Analysis (IPMA)**	
	Direct Effect	Indirect Effect	Total Effect	**I**mportance	Performance
Horizontal Collectivism -> Social Well-being	.166	-	.166	.166	79.161
SPS Efficient -> Social Well-being	.299	-	.299	.299	72.702
SPS Inefficient -> Social Well-being	-.296	-	-.293	.293	72.599
Horizontal Individualism -> Social Well-being	.144	.091	.235	.235	79.256
Vertical Individualism -> Social Well-being	-	.124	.124	.124	76.897
Vertical Collectivism -> Social Well-being	-	.189	.189	.189	79.188
Horizontal Individualism -> SPS Efficient	.166	-	.166	-	-

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Vertical Collectivism -> SPS Efficient	.319	-	.319	-	-
Vertical Individualism -> SPS Efficient	.163	-	.163	-	-
Vertical Collectivism -> SPS Inefficient	- .32	-	- .32	-	-
Vertical Individualism -> SPS Inefficient	- .258	-	- .258	-	-
Horizontal Individualism -> SPS Inefficient	- .144	-	- .144	-	-

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Evaluation of the overall fit of the model

To study the fit of the outer and inner models, the general model of structural equations of the research was evaluated using Goodness of Fit (GOF). This index takes into consideration both internal and external models and is used as a measure of overall model performance. However, the GOF value is not included in the software output and is calculated manually.

$$\text{GOF} = \sqrt{\overline{\text{Communalities}} \times \overline{R^2}} = \sqrt{.466 \times .219} = .319$$

Wetzels, Odekerken, and Van Oppen (2009) have introduced three values of .1, .25, and .36 as weak, medium, and strong values for GOF. According to the above GOF evaluation, the criterion was .319. Therefore, the fit of the general model of the research is very appropriate.

Discussion

An attempt was made in the present study to investigate the relationship between horizontal and vertical individualism and collectivism and social well-being with the intermediary of the social problem-solving ability. Social well-being is based on the social tasks that human beings face at the heart of social structures and societies. Therefore, cultural values as behavioral patterns can play an important role in shaping social well-being. Because the behavioral characteristics of every human being are the result of the dominant culture in which they grew.

The results of this study show that horizontal individualism and collectivism can directly predict social well-being. In psychology, individualismand collectivism are considered as appropriate opinions, orientations, or variables at the individual level and individuals are thought to define themselves in relation to culture or society (Arpaci & Baloğlu, 2016). Also, cultures that

emphasize horizontal relationships tend to be equal with regard to all individuals and in establishing a uniform social hierarchy (Chen, 2012) These findings are in line with the results of studies by Swader (2019); Laher & Dokrat (2019); Heu, Zomeren Hansen (2019); Binder (2019); Lampridis & Papastyliano (2017); Hashemi et al., (2016); and Ka'abe et al., (2017).. In explaining this finding, we can point to the functionalist view that social health is seen in terms of meaningful existence and the potential of individuals to perform their duties (Waterman, 1993). Horizontal collectivism attaches greater importance to self-interdependence, collaboration, and equality rather than the freedom of individuals. In these societies, collective values are highlighted, and success is defined as growth, social development, and human welfare (Butler, Sawyer & Maas, 2010). Collective goals result in the development of individual relationships and improvements in social interactions. Therefore, social well-being which indicates the understanding of the social function of the individual, plays an important role in the physical and mental health of people in society. Similarly, it reflects the positive aspects of human health through interaction with other people and society. On the other hand, horizontal individualism plays a great part in self-independence, freedom, and in individuals being distinct. The inclinations of individualistic values play an important role in the formation of social health, which in psychology is considered as the most appropriate ideas, orientations, or variables at the individual level. In societies with a dominant culture of individualism, there is a dominant cultural structure in which individuals act self-sufficiently and are encouraged to feel they are effective (Hofsted, 1984). Critchley (1997) follows the tradition of rational freedom, in which

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freedom of an individual coexists with that of other individuals. He has written frequently about the main thinkers in this tradition and has shown that social relations and conditions in which human beings prosper can make the existence of the "free individual" possible. Furthermore, An's (2019) empirical studies showed that eastern societies whose culture is dominated by collectivism feel happier and more satisfied due to their emphasis on individualism and independence. The findings of the present study confirm An's results (2019). Thus, it can be claimed that in Iran, as an astern society, horizontal individualism is directly associated with social well-being.

Another interesting finding of the current study shows that horizontal and vertical individualism and vertical collectivism can have an impact on social well-being through social problem-solving ability. Individualistic cultural values can influence social problem-solving and social well-being. Individualism collectivism cultural values can have an influence on improve social problem-solving ability. The ability to solve constructive problems is one of the most important thought processes. It helps people deal effectively with the phenomena they face on a daily basis, which results in an increase in people's social health. This is in line with the findings of the studies by Moieni et al. (2020); Han et al. (2019); Buddeberg, Hecker (2018); and Kameli & Yusefi, 2019). Social well-being comes about by means of an environmental, skillful, and emotional-behavioral process. Cultural values can pave the way for social interactions and in turn the quality of life can be improved (Zalewska & Zawadzka, 2016). Cultural values of the society can negatively or positively influence the development of individual skills and capacities (Yi, 2018). Problem-solving ability, as an individual variable related to skills and abilities, is one of the most important skills of human

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beings. This skill is related to health and to social and personal functioning, which manages critical needs, expression skills, conflict resolution, increasing socio-communication skills, and increasing self-efficacy and self-management, which help individuals control situations and issues. Contemporary individuals are exposed to complicated problems due to constant changes and complexities in everyday life. Therefore, this ability is essential for ensuring social well-being, which can influence the social adjustment of individuals (Arabzadeh, Kadivar & Delavar, 2015). In a similar way, the results of Zhang, Yeung, Fung, & Lang (2011) research show that the ability to solve social problems is one of the basic abilities in social health, which has a significant effect on social adjustment, social competence, and psychological well-being (Okbay et al., 2016). It should be noted that horizontal collectivism does not significantly affect social problem-solving ability. In other words, in such cultures, individuals should overlook their personal needs and goals in favor of collective needs and goals and thus conform to social norms. Thus, although following cultural norms, in collective cultures, does not have a positive effect on social problem-solving ability, it contributes to the development of social well-being (Arieli & Sagiv, 2018).

One other resultof this research also indicated that efficient problem-solving influences social well-being directly and positively, while inefficient problem-solving affects it directly and negatively. Modern man is always faced with many problems due to the complexity of and constant changes in society. The ability to solve social problems is a vital skill and of utmost importance in living in the present age (Johnson et al., 2014). This skill is one of the most important components that can affect

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social health and the ability to solve social problems. Problem-solving ability is the purposeful action that individuals use to determine or discover appropriate solutions to the problems of everyday life (Becker–Weidema et al., 2010), which is in conformity with the results of the studies by Walker et al., (2019); Sun, Harris & Vazire, (2019); Saputro, Rohaeti & Prodjosantoso, (2018); and Wüsten & Lincoln (2017). Also, Shokohi Yekta et al. (2008) stressed the role of problem-solving ability in the cognitive, social, and emotional well-being of individuals. Improvement in problem-solving ability predicts different aspects of well-being in society (Fleming et al., 2006). All these findings showed that socio-economic status, social supports, satisfaction with life, and social happiness are directly associated with the social well-being of individuals.

Social problem-solving ability, as a cognitive process, is a behavior through which a person tries to manage stressful problems or situations. It is also considered a specific form of exposure because it requires adaptation to the stressful events of life (D'Zurilla, & Nezu, 2010). People with efficient problem-solving ability approach problems and deem them as a doable and solvable social situation. This technique helps to facilitate problem-solving performance because it creates positive tendencies, emotions, and feelings, as it deems the problems as solvable issues and learning opportunities. Principles are logical, wise, efficient, and adaptive, which leads to the development of personality (Romano, 2019). People with inefficient problem-solving ability express negative feelings and avoidant tendencies in dealing with problems, and by using countermeasures to deal with dysfunctional practices in a dubious way. This inefficiency creates self-criticism and avoidance of the community, which disrupts problem-solving performance (Webster, 2019).

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According to the results of the study (Walker et al., 2019), inefficient problem-solving results in low quality of life and consequently low social well-being. This leads to increased risk of suicide that is due to the lack of learning with regards to this skill, which results in a decrease in the quality of life as well as a decrease in social well-being.

Individuals with social well-being, due to their ability to deal with challenges in life, can act better when faced with problems and thus prevent unfavorable reactions, resulting in improvedeffective performance in society. Thus, to improve social well-being, special attention should be paid to problem-solving skills. Overall, studies in the literature suggest that better health can be expected in cultures in which independence is important and individuals enjoy personal autonomy and keep relational harmony (Kitayama & Tompson, 2010; Hartanto, Lau & Yong, 2020). Thus, it is recommended that the circumstances under which individuals more probably reveal their cultural tendencies even when they do not conform to common cultural themes should be studied (Moon, Travaglino & Uskul, 2018).

The results of the present study indicate the importance of cultural values in the promotion of social problem-solving ability for discovering adaptive solutions, as well as being a predictor of the social well-being of students. Therefore, the investigation of cultural values is of central importance in a society. According to the findings of this study, horizontal individualism values and efficient problem-solving obtained the highest performance, and importance, respectively. Similarly, the impact of vertical individualist-collectivist values on social problem-solving ability is an important predictor of social well- being. Further investigation in future studiesis required in order to help fill

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research gaps between the cultural values and social well-being in our society. Therefore, it is suggested that researchers expand their studies and underline the importance of the inclusion of cultural values in the programs of the education system. Moreover, it is of essential significance for students to improve their efficient social problem-solving skills so that they have a more reliable basis to enhance social well-being. It is hopedit will be determined and developed in future studies.

Limitations

The present study, like any other study in the humanities, has some limitations. The research population in this study included only students from four cities in Iran; also, some intervening variables were not controlled, as a result, caution should be exercised when generalizing the results of the study to populations outside this field. The results indicate the importance of cultural values in social problem-solving ability and social health of students and can contribute to future research on cultural values and social well-being.

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