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## Using a Model of Economic Solvency to Understand the Connection between Economic Factors and Intimate Partner Violence

By Heidi Gilroy<sup>1</sup>, Judith McFarlane<sup>2</sup>, Nina Fredland<sup>3</sup>, Sandra Cesario<sup>4</sup>, Angeles Nava, and John Maddoux

### Abstract

Poverty is a risk factor for intimate partner violence (IPV); however, little is known about the economic state at which women are no longer at risk for IPV due to their economic status, which is economic solvency. A Model of Economic Solvency in women has been developed from the literature that includes four factors: human capital, social capital, sustainable employment, and independence. The purpose of this research is to validate the model in a sample of women reporting IPV. A confirmatory factor analysis was performed to test the model using data from 280 abused women. Examination of the model yielded adequate fit with the data, indicating that the model is valid for use with women reporting IPV. The validation of the model offers strength of association between constructs and can be used to plan interventions to improve economic solvency in abused women to potentially reduce violence and facilitate recovery.

*Keywords:* intimate partner violence, U.S. violence, poverty, economic solvency, women's health

### Introduction

Economic issues are often major factors contributing to the beginning and continuation of intimate partner violence. Although intimate partner violence against women can occur in any relationship, women with low income are at higher risk for violence (Vung, Ostergren, & Krantz, 2008; Ali, Asad, Mogren, & Krantz, 2011; Breiding, Chen, & Black, 2014). There are several theories as to why poverty is a risk factor. A widely accepted theory is that it may have to do with the stress of trying to survive without access to resources or the threats to masculine identity that poverty can inflict (Jewkes, 2002).

In addition to being a risk factor for intimate partner violence, poverty may also exacerbate the consequences of violence. For example, limited or no access to health care challenges an abused woman's recovery and wellbeing. She may be prohibited by the abuser from reaching out to a healthcare provider or the abuser may not allow her access to transportation to attend a clinic visit (Goodman, Smyth, Borges, & Singer, 2009). Thus, a woman who is both poor and abused

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may have a harder time receiving the help she needs to recover from intimate partner violence (Liang, Goodman, Tummala-Narra, & Weintraub, 2005). Furthermore, a woman reporting abuse may also have problems securing and maintaining employment due to the abuser interfering with her employment. This may involve frequent phone calls or appearing at the employment site. Work interference makes it difficult for the woman to decrease her risk of future violence due to poverty (Romero, Chavkin, Wise, & Smith 2003; Staggs & Riger, 2005). Also, a woman who is both poor and abused is at greater risk for mental health problems like depression (Chuang, Cattoi, Camacho, Dyer, & Weisman 2013) and Post-Traumatic Stress Disorder (PTSD) (Rodriguez, Heilemann, Fielder, Ang, Nevarez, & Mangione, 2008), further compromising her functioning as well as her ability to leave the violent relationship and exit poverty.

The links between poverty and intimate partner violence are well established in the literature. As poverty increases so does the likelihood of partner violence (Capaldi, Knoble, Shortt, & Kim, 2012). However, less is known about the economic state that a woman must reach to decrease her poverty-based risk of intimate partner violence and negative outcomes. Economic solvency is defined as “a long-term state that occurs when there is societal structure that supports gender equity and external resources are available and can be used by a woman who has necessary human capital, sustainable employment and independence” (Gilroy, Symes, & McFarlane, 2015, p. 102). The Model of Economic Solvency discussed herein, based on the definition, includes four main factors: human capital, social capital, sustainable employment, and independence. Examining the interaction between intimate partner violence and the four factors of the Model of Economic Solvency may enable the design of evidence-based interventions that include the impact of economic solvency on the occurrence and continuation of intimate partner violence. The purpose of this study is to describe and test the Model of Economic Solvency, consisting of four factors, human capital, social capital, sustainable employment, and independence. Empirical data from women who report intimate partner violence is used to test the model.

## **Literature Review**

### *Four Factors Identified*

Work on developing this model began with a concept analysis of economic solvency (Gilroy, Symes, & McFarlane, 2015). Literature about women and economic solvency, self-sufficiency, and self-reliance was reviewed in order to create a research-based definition of economic solvency. The four factors of this Model of Economic Solvency—social capital, human capital, sustainable employment, and independence—were all represented in the literature as important to women’s economic solvency. See Gilroy, Symes, & McFarlane (2015) for a full explanation of the literature review and findings. For the purposes of this research, a literature review was conducted on the four factors to identify appropriate measures to represent the factors of the model.

### *Human Capital*

Human capital includes knowledge, attitudes, and life skills the woman can use to negotiate issues of daily living (Simmons, Braun, Wright, & Miller, 2007). Education is often cited as a factor important for economic solvency (Scott, London, & Gross, 2007; Zhan & Pandey, 2004). Hong, Sherriff, and Naeger (2009) identified psychological strength, self-motivation, and life skills as human capital factors important to economic solvency. For example, a woman who has the

knowledge to confront problems in her life and has the necessary self-confidence is more likely to be or become economically solvent.

### *Social Capital*

In addition to human capital, social capital is also important for economic solvency. Social capital is defined as the ability of a woman to access and use a network of individuals for her welfare (Larance, & Porter, 2004). Social support may be informal or formal. Informal social support includes friends and family members. Formal social support includes resources in the community such as police officers, social workers, or advocates for abused women (Liang, Goodman, Tummala-Narra, & Weintraub, 2005). For example, a woman might access informal social support by asking to stay with a friend for a few weeks. She may also use formal social support by accessing services at the mental health clinic. Social support is reported to be a predictor of economic wellbeing in women (Simmons, Braun, Wright, & Miller, 2007). Kohler, Anderson, Oravec, and Braun (2004) found that the presence of a network of friends and family correlated with greater self-reported economic success in poor women who had experienced abuse.

Both availability and type of social support are important variables for economic solvency. Social support can be emotional (i.e., having someone who offers love and respect), instrumental (i.e. helping the woman with a particular problem), tangible (i.e. providing a woman with the goods and services she needs), or informational (i.e. giving the woman advice) (Simmons, Braun, Wright, & Miller, 2007). Friends or family members, who provide social support and are themselves economically solvent, serve as role models to low-income women (Hong, Sherriff, & Naeger, 2009). Social capital allows a woman to use social networks for economic solvency.

### *Sustainable Employment*

Sustainable employment is a paid position that provides sufficient income and benefits to meet the woman's needs over time (Walker & Kellard, 2001). Employment, regardless the type, has been shown to positively correlate with economic solvency (Simmons, Dolan, & Braun, 2007). Several studies about economic solvency in women describe sustainable employment as a "good" job and precarious employment as a "bad job" (Johnson & Corcoran, 2003; Woodward, 2008), but what qualifies as good or bad is not well-defined in the literature. Woodward (2008) describes a good job as one that pays more than the U.S. minimum wage, provides opportunity for advancement, and benefits such as health insurance. On the other hand, Evans (2007, p. 31) describes precarious employment as "temporary, part-time, providing irregular hours, low wages and few, if any, benefits." It is not clear from the literature how long a woman must be working at a position to reach economic solvency (Gilroy, Symes, & McFarlane, 2015).

### *Independence*

Independence means having access to personal or family funds and the means to earn income as well as having decision-making power about finances (Ford-Gilboe et al., 2009). A woman needs to earn or have access to a sufficient amount of money to meet her family's needs such as housing, food, and medical care in order to be independent. In a longitudinal qualitative study, women who were dependent on welfare were asked about the meaning they ascribed to the notion of economic solvency. They stated that it meant they did not need to rely upon anyone, including friends, family, or community agencies, for financial support (Scott, London, & Gross, 2007). In a study of low-income job seekers, Hong, Sherriff, and Naeger (2009) found that women

defined self-sufficiency (or independence) as being able to earn enough money to meet their own financial needs.

### *An Economic Solvency Model*

To be truly economically solvent, women must achieve all of the aforementioned factors (Gilroy, Symes, & McFarlane, 2015). There is evidence in the literature that the human capital, social capital, sustainable employment, and independence interact with each other in the lives of abused women. For example, Staggs et al (2007) found higher levels of social support predicted sustainable employment. In the same study, human capital factors, such as education, prior work skills and history were linked to emotional and tangible social support. Inability to meet family needs with economic resources, or lack of independence, correlated with problem-solving abilities and skills (Goodman, Smyth, Borges, & Singer, 2009). The authors did not find a study that measured or correlated the four factors (i.e., human capital, social capital, sustainable employment, and independence) with a group of women reporting intimate partner violence.

### *The Model in Context*

The Model of Economic Solvency is best understood as taking place within the Socio-Ecological framework, which takes into account the social context in which the woman lives. The Socio-Ecological framework recognizes that the women are influenced by continuous interactions between herself, her immediate relationships, her community, and society at large (Heise, 1998). Because economic solvency is a characteristic of the woman, it is helpful to understand the factors of economic solvency as well as economic solvency as a whole is affected by these interactions as well. For example, the woman's relationship interactions with her abuser plays a large role in how economic solvency and violence interact. Also, issues at the societal level such as traditional gender roles or availability of jobs and education for women can also play a large part.

### *Research Question*

How well do measures of (1) human capital, (2) social capital, (3) sustainable employment, and (4) independence in women who report intimate partner violence fit with the Model of Economic Solvency?

## **Methods**

This data is from of an ongoing seven-year study of 300 women who sought help for intimate partner violence at either the District Attorney's Office for protection orders or from a safe shelter (McFarlane, et al., 2012). The participants are asked questions about human capital (i.e., personal progress scale, social problem solving, self efficacy), social capital (i.e., social support), sustainable employment (i.e., employment consistency and benefits,) and independence (i.e., Economic hardship, poverty ratio) every four months for seven years.

See Appendix A for forms used to collect data in this analysis.

### *Population and Sample*

Women were eligible for the study if they were first time seekers of services at either the District Attorney's Office for a protection order or a battered women's shelter; had experienced intimate partner violence; were at least 18 years old; had at least one child between the ages of 18 months and 15 years living with her at least 50% of the time; and, spoke English or Spanish. A

total of 300 women agreed to participate in the study. At the time of data extraction for this research, which was 3 years into the study, 94% of the women were retained, with 3% of the women lost to follow-up and 3% withdrew voluntarily.

#### *Protection of Human Subjects*

Approval was obtained from the Institutional Review Board (IRB) of Texas Woman's University.

### **Instruments – Human Capital Measures**

#### *Personal Progress Scale-Revised*

The Personal Progress Scale-Revised (PPS-R) is a 28-item instrument measuring empowerment in women (Johnson, Worell, & Chandler, 2005). The original Personal Progress Scale was based on the four principles of the Empowerment Model. Reliability and validity was tested with a sample of 222 women recruited from graduate and undergraduate university classes, local community health centers, a spouse abuse center, a rape crisis center, a university counseling center, and a training facility for advanced counseling psychology students with reliability  $\alpha=.88$ . For this study the coefficient alpha was .85.

#### *Social Problem-Solving Inventory-Revised*

The Social Problem-Solving Inventory-Revised Short (S) (SPSI-R: S) (D'Zurilla, Nezu, & Maydeu-Olivares, 2002) is derived from the longer 70 item Social Problem Solving Inventory. The SPSI-R: S, a 25 item tool, designed to assess problem solving for everyday situations includes five subscales that are either adaptive or dysfunctional problem solving: positive problem orientation, negative problem orientation, rational problem solving, impulsivity/carelessness style, and avoidance style. Reliability and validity of the SPSI-R: Short form (S) was tested with a sample of 601 college students of various racial and ethnic backgrounds (Maydeu-Olivares & D'Zurilla, 1996). Test-retest reliability ranged from .68-.85 among the sub-scales. Internal consistency ranged from .80 to .95 among sub-scales. Structural and predictive validity of the SPSI-R: S were tested with results indicating goodness-of-fit and correlations with related measures similar to the SPSI-R:L (longer 52-item form). For this study the coefficient alpha was .81 for positive problem solving, .82 for negative problem solving, .74 for rational problem solving, .72 for impulsive problem solving, and .68 for avoidant problem solving.

#### *General Self-Efficacy*

General self-efficacy, a 10-item instrument, assesses a general sense of perceived self-efficacy with the aim to predict coping and adaptation after stressful life events (Schwarzer & Jerusalem, 1995). Criterion related validity is documented in numerous correlation studies where positive coefficients were found with favorable emotions and negative coefficients were found with depression, anxiety, and somatization. In samples from 23 countries, Cronbach's alphas ranged from .76 to .90, with the majority in the high .80s (Schwarzer & Jerusalem, 1995). For this study the coefficient alpha was .86.

## **Social Capital Measures**

### *Norbeck Social Support Inventory*

The Norbeck Social Support Inventory is a six-item instrument measuring multiple components of social support, including functional properties of social support (e.g., emotional and tangible support) and network properties (e.g., stability of relationships, frequency of contact), as well as the amount of support from specific sources (e.g., relatives, friends; Norbeck, Lindsey, & Carrieri, 1981, 1983). Construct and concurrent validity are established on samples of employed adults ranging in age from 22 to 67 and internal consistency established with Pearson correlations (Norbeck et al., 1981, 1983). The instrument was revised to the present form in 1995 (Norbeck, 1995). For the purposes of this study, respondents are asked for the initials of their three primary sources of support. The coefficient alpha for this study was .83

## **Independence Measures**

### *Economic Hardship*

Economic Hardship, a 10-item tool, is derived from the “Basic Needs – Ability to Meet Expenses” section of the Survey on Income and Program Participation (SIPP) (U.S. Census Bureau, 2014), the Social Indicators Survey (Columbia University, n.d.), and the Study of Work, Welfare, and Family Well-Being of Iowa Families on FIP (Sing, Hill, & Mendenko, 2001).

### *Poverty Ratio*

Poverty ratio is a calculation based on the U.S. Department of Health and Human Services 2014 Poverty Guidelines. The woman reports her income from formal employment such as being a department store cashier or a teacher) and from informal employment such as a babysitter income or from selling homemade food or crafts Her total income from formal and informal sources is divided by the Federal Poverty Limit for a household with the same number of people as the woman reports.

## **Sustainable Employment Measures**

Sustainable employment was determined by a series of demographic questions. Women were asked whether or not they were employed and how many hours they worked in one week. For the first measure of sustainable employment, dummy codes were used to indicate which women had full-time employment (greater than 35 hours a week) and which women did not. Another question asked whether women received health insurance from their job as a proxy for employment-related benefits. Finally, employment over time was calculated by the presence of employment in three interviews over one year. The possible range of scores for this measure was 0 to 3, with zero indicating employment at none of the three time points and 3 indicating employment at all three time points.

See Appendix A for a copy of the measurement tools used.

## **Treatment of Data**

To test the usefulness of the Model of Economic Solvency towards understanding the interaction of economic factors with intimate partner violence, a confirmatory factor analysis (CFA) was conducted using LISREL 9.1. CFA utilizes a maximum likelihood estimation method

to test the goodness of fit between a theorized measurement model and a dataset. When conducting the CFAs a constraint value of 1 was placed on one measured variable for each latent construct. This type of constraint is commonly used in modeling analyses that contain items with a defined scale. Prior to conducting the CFA on the full measurement models, separate CFAs were conducted on each subscale (e.g., Human Capital, Social Capital, Sustainable Employment, Independence). The error variance of strongly related items was allowed to correlate within a latent construct, to reduce the impact of multicollinearity.

To validate the goodness of fit between the hypothesized model, defined as the four components of economic solvency derived from the literature, human capital, social capital, sustainable employment, and independence, the select data obtained from this sample was assessed by the statistical processes of the Standardized Root Mean Square Residual (SRMR), Tucker-Lewis Index (TLI), which is the equivalent to the Non-normed Fit Index (NNFI), Root Mean Square Error of Approximation (RMSEA), and Comparative Fit Index (CFI), were used. These statistics are different ways of mathematically determining if the model fits the data. Using more than one test allows researchers to determine the adequacy of the theorized model.

In addition to measures of fit, the measurement model also computes path coefficients to describe the relative strength of each indicator on each corresponding latent construct. The relationship between each indicator and the latent construct is tested for significance. Reliabilities of the measures were assessed by examining the individual composite reliabilities, which is the method to measure internal consistency of a measure. This was done using the suggested procedure of Fornell and Larker (1981). Additionally, as also suggested by Fornell and Larker, average variance extracted (AVE) values were calculated for each construct to test discriminant validity.

Select items were reverse coded conceptually to ensure all items within a latent correlated in a positive direction to determine the most parsimonious measurement model. Additionally, items that correlated strongly across latent constructs were tested in both constructs, and the model with the best overall fit was retained. Specifically, this applied to only one construct and resulted in moving empowerment from social capital to human capital.

## Results

### *Description of the Sample*

A total of 280 women were included in the analysis. The mean age of the women was 30.7 years ( $SD=7.61$ ). For the education demographic, 32.9% of the women reported less than high school diploma, 19.3% graduated high school, 42.1% had some college, and 5.7% earned a college degree. More than half of the women self-identified as Hispanic (57.5%). One quarter (25.2%) self-identified as Black, and 10.8% as White. All women reported intimate partner violence at entry into the study.

**Table 1. Means and Standard Deviations of Continuous Demographics of Full Sample**

	<i>N</i>	<i>M</i>	<i>SD</i>	Min	Max
Age of woman	280	30.70	7.61	18.00	52.00
Child Age (Years)	278	6.87	4.22	1.50	16.42
Months in Relationship	280	86.33	68.84	0.00	432.00
People living in Household	280	4.29	1.70	1.00	12.00

**Table 2. Frequencies and Percentages of Categorical Demographics of Full Sample**

	n	%
Education		
Less than High School	92	32.9
High School/GED	54	19.3
Some College	119	42.1
College Degree or Higher	16	5.7
Race/Ethnicity		
Hispanic	161	57.5
Non-Hispanic	119	42.5

*Findings*

The goodness of fit between the hypothesized model and the data obtained from this sample was assessed by the Standardized Root Mean Square Residual (SRMR), Tucker-Lewis Index (TLI), which is the equivalent to the Non-normed Fit Index (NNFI), Root Mean Square Error of Approximation (RMSEA), and Comparative Fit Index (CFI), see Table 5. According to Hu and Bentler (1999), the maximum cutoff values for the SRMR is .08. The maximum cutoff for RMSEA is .08 according to Browne and Cudeck (1993). The minimum cutoff value for the NNFI and the CFI is .90 to conclude a good fit between the model and the data. Examination of the full measurement model yielded adequate fit with the obtained data,  $\chi^2(90) = 228.89$ ; *adj.  $\chi^2$*  = 2.59; RMSEA = .076; NNFI = .900; CFI = .918; SRMR = .080.

In addition to measures of fit, the measurement model also computes path coefficients to describe the relative strength of each indicator on each corresponding latent construct. The relationship between each indicator and the latent construct is tested for significance. Path coefficients and significance values are also shown in Table 3.

**Table 3. Parameters of the Measurement Model, Standardized Path Coefficient, T Values, Composite Reliability, Average Variance Extracted, and Highest Shared Variance: Full Sample**

	Human Capital Path	Social Capital Path	Sustainable Employment Path	Independence Path
Empowerment	.68	*		
Education	.23	*		
Impulsive Problem Solving (RC)	.70	*		
Avoidance Problem Solving (RC)	.63	*		
Negative Problem Solving (RC)	.83	*		
Positive Problem Solving	.49	*		
Rational Problem Solving	.27	*		

	Human Capital Path	Social Capital Path	Sustainable Employment Path	Independence Path
General Self-Efficacy	.43	*		
Emotional Support		.96	*	
Tangible Support		.82	*	
Insurance from Work			.51	*
Sustained Employment			.66	*
Fulltime Employment			.78	*
Housing Insecurity (RC)				.22 <sup>m</sup>
Economic Difficulties (RC)				.16*
Income to Poverty Ratio				.68*
Composite Reliability	.859	.881	.758	.609
AVE	.464	.788	.519	.426
HSV	.052	.052	.271	.271

Note. Measurement Model  $\chi^2(90) = 228.89$ ; *adj.*  $\chi^2 = 2.59$ ; RMSEA = .076; NNFI = .900; CFI = .918; SRMR = .080; AVE = average variance explained; HSV = highest shared variance; RC = reverse coded; in each conceptual factor, one of the unstandardized paths was constrained to 1.0, meaning no t-value is produced for that indicator, \*  $p < .05$ ; <sup>m</sup>  $p < .10$

Reliabilities of the measures used were assessed by examining the individual composite reliabilities using the suggested procedure of Fornell and Larker (1981) shown in Table 5. Additionally, as also suggested by Fornell and Larker, average variance explained (AVE) values were calculated for each construct, also shown in Table 3. Composite reliabilities were in the good range for Human Capital, Social Capital, and Sustainable employment, .859, .881, and .758 respectively and in the acceptable or adequate range for independence (.609). Average variance extracted across all measures approached or surpassed the critical value of .500, and ranged from .426 (Independence) to .788 (Social Capital)

Discriminant validity was examined across all latent constructs. The highest shared variance (HSV) was lower than the AVE of each construct, indicating adequate discriminant validity for each construct in the model based on the criteria set forth by Fornell and Larker (1981). Lastly, correlations among latent constructs are presented in Table 4, which further indicate independence between latent constructs.

**Table 4. Correlations between Latent Constructs**

	Human Capital	Social Capital	Sustainable Employment
Social Capital	.229		
Sustainable Employment	.116	.045	
Independence	.066	.027	.521

## Discussion

The validation of the Model of Economic Solvency indicates that economic solvency of women, who report intimate partner violence is linked to measures of human and social capital, sustainable employment, and independence. Previous research has shown indirect links between intimate partner violence and future economic hardship. For example, research by Adams and colleagues (2012) showed that economic hardship after intimate partner violence was only partially mediated by job instability, the opposite of sustainable employment, indicating the presence of other factors influencing economic solvency. This research suggests these factors may be human capital, social capital, and independence. Research has demonstrated that the link between intimate partner violence and future economic hardship is complex and multi-factorial and that context is important in understanding the relationship. A review of the literature by Goodman et al. (2009), found that poverty following intimate partner violence stemmed from many sources, including abuser behavior and mental health problems, which may directly or indirectly affect all the factors of economic solvency described in the model. Housing insecurity following intimate partner violence, an element of independence in the Model of Economic Solvency, was also identified as increasing risk for poverty following intimate partner violence (Goodman et al., 2009).

Previous research has also indicated that poverty is a risk factor for future abuse (World Health Organization, 2002). However, a study by Dalal (2011) in India found that the poorest of women living in poverty did not have increased risk for intimate partner violence, while the most educated women did have increased risk when compared to other groups. These findings are consistent with the study conducted in South Africa by Jewkes, Levin, and Penn-Kekana (2002). Both studies discuss the role of patriarchy in the seemingly disparate findings, of women with greater education or income than their partners as threatening to the socially acceptable power structure in the home. Jewkes et al. (2002) also mention the possibility of extreme poverty reducing finance-related conflict in the home, especially if the family is being supported by a third party. The findings in this study, as well as the previous research mentioned, attest to the need for a more holistic view of economic solvency and its relationship to intimate partner violence as is captured in the Model of Economic Solvency. One explanation related to the extremely poor women in the study by Jewkes (2002), who were protected from experiencing intimate partner violence, is that they had a level of social capital which contributed to their economic solvency compared to women depending on third-party financial support. More research is needed to further explore factors related to the economics of poverty and intimate partner violence.

## Conclusion and Implications

This study tested a four factor Model of Economic Solvency to gain a better understanding of the interaction of economics and partner violence against women. We conclude that an abused woman's economic solvency is dependent on traditional thoughts of adequate pay and sustainable employment but also on her social support, ability to solve problems, self-efficacy, and personal concept of empowerment and equality standing among others.

At present, many of the interventions for women reporting intimate partner violence address one aspect of the problem, specifically safety and the reduction of the likelihood of further abuse. Criminal justice services and safe shelters provide women the opportunity to escape the

violence. Some advocacy interventions also address one or two of the factors in this Model of Economic Solvency. For example, one advocacy intervention described by Bybee and Sullivan (2005) addressed sheltered women's issues with social capital, specifically their ability to access social support and community resources. Another example is a study of micro-finance in Bangladesh that was mainly designed to increase human capital in women, in addition to providing financial support (Ahmed, 2005). In the Bybee and Sullivan study (2005), there were initial benefits of decreased abuse shown after the advocacy intervention, but these benefits were not lasting. In the Ahmed (2005) micro-finance intervention, there was an initial increase in violence followed by no difference in risk for violence between intervention and non-intervention groups. In general, proof of lasting positive results from intimate partner violence interventions is lacking in the literature (Stover, Meadows, & Kaufman, 2009) and may be explained by single construct interventions, such as use of social support and advocacy alone (Sullivan, 2005) or microfinance alone (Ahmed, 2005). Using the four-factor Model of Economic Solvency, validated direction is offered for the necessity of multiple interventions that address enhancement of human and social capital as well as sustainable employment and independence simultaneously.

### **Limitations**

Women in this study were recruited after they reached out for justice services through a District Attorney's Office or sought safe shelter. Women who either did not seek help for intimate partner violence or who sought help in other places were not included in the recruitment of participants. The generalizability of the model validation may be affected by the limited nature of the sample. As this research was part of an ongoing study, measures were selected from the original study materials rather than selecting measures specifically for the factor. Other tools may exist that better measure the factors presented in the theoretical model. The measures were also self-report, which may introduce some recall bias into the data.

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**Appendix A: Instruments**

**Economic Hardship (Fragile Families, 2006)**

<b>FF 1</b>	Did you receive free food or meals?	<b>0</b>	<b>1</b>	<b>66</b>
<b>FF 2</b>	Did you not pay the full amount of rent or mortgage payments?	<b>0</b>	<b>1</b>	<b>66</b>
<b>FF 3</b>	Were you evicted from your home or apartment for not paying the rent or mortgage?	<b>0</b>	<b>1</b>	<b>66</b>
<b>FF 4</b>	Did you not pay the full amount of a water, electricity or heating bill?	<b>0</b>	<b>1</b>	<b>66</b>
<b>FF 5</b>	Did you borrow money from friends or family to help pay bills?	<b>0</b>	<b>1</b>	<b>66</b>
<b>FF 6</b>	Did you move in with other people even for a little while because of financial problems?			
<b>FF 7</b>	Did you stay at a shelter, in an abandoned building, an automobile or any other place not meant for regular housing even for one night?	<b>0</b>	<b>1</b>	<b>66</b>
<b>FF 8</b>	Was there anyone in your household who needed to see a doctor or go to the hospital but couldn't go because of the cost?	<b>0</b>	<b>1</b>	<b>66</b>
<b>FF 9</b>	Have you cut back on buying clothes for yourself?	<b>0</b>	<b>1</b>	<b>66</b>
<b>FF 10</b>	Have you worked overtime or taken a second job?	<b>0</b>	<b>1</b>	<b>66</b>

**Social Problem Solving Inventory (D'Zurilla, Nezu, & Maydeu-Olivares, 2002)**

<b>Below are some ways that you might think, feel, and act when faced with problems. A problem is something important in your life that bothers you. Please rate HOW TRUE each statement is for you.</b>					
<b>P</b>	<b>I feel threatened and afraid when I have an important problem to solve</b>				
<b>S</b>	<b>Not At All True</b>	<b>Slightly True</b>	<b>Moderately True</b>	<b>Very True</b>	<b>Extremely True</b>
<b>1</b>	0.....1..... 2..... 3.....4.....				
<b>P</b>	<b>When making decisions, I do not evaluate all my options carefully enough</b>				
<b>S</b>	<b>Not At All True</b>	<b>Slightly True</b>	<b>Moderately True</b>	<b>Very True</b>	<b>Extremely True</b>
<b>2</b>	0.....1..... 2..... 3.....4.....				
<b>P</b>	<b>I feel nervous and unsure of myself when I have an important decision to make.</b>				
<b>S</b>	<b>Not At All True</b>	<b>Slightly True</b>	<b>Moderately True</b>	<b>Very True</b>	<b>Extremely True</b>
<b>3</b>	0.....1..... 2..... 3.....4.....				
<b>P</b>	<b>When my first efforts to solve a problem fail, I know if I persist I will be able to eventually find a good solution.</b>				
<b>S</b>	<b>Not At All True</b>	<b>Slightly True</b>	<b>Moderately True</b>	<b>Very True</b>	<b>Extremely True</b>
<b>4</b>	0.....1..... 2..... 3.....4.....				
<b>P</b>	<b>When I have a problem, I try to see it as a challenge, or opportunity to benefit in a positive way from having the problem.</b>				
<b>S</b>	<b>Not At All True</b>	<b>Slightly True</b>	<b>Moderately True</b>	<b>Very True</b>	<b>Extremely True</b>
<b>5</b>	0.....1..... 2..... 3.....4.....				

P	<b>I wait to see if a problem will resolve itself first, before trying to solve it myself.</b>				
S	Not At All True	Slightly True	Moderately True	Very True	Extremely True
6	0.....	1.....	2.....	3.....	4.....
P	<b>When my first efforts to solve a problem fail, i get very frustrated.</b>				
S	Not At All True	Slightly True	Moderately True	Very True	Extremely True
7	0.....	1.....	2.....	3.....	4.....
P	<b>When i am faced with a difficult problem, I doubt that I will be able to solve it on my own no matter how hard I try.</b>				
S	Not At All True	Slightly True	Moderately True	Very True	Extremely True
8	0.....	1.....	2.....	3.....	4.....
P	<b>Whenever I have a problem I believe that it can be solved.</b>				
S	Not At All True	Slightly True	Moderately True	Very True	Extremely True
9	0.....	1.....	2.....	3.....	4.....
P	<b>I go out of my way to avoid having to deal with problems in my life..</b>				
S	Not At All True	Slightly True	Moderately True	Very True	Extremely True
10	0.....	1.....	2.....	3.....	4.....
P	<b>Difficult problems make me very upset.</b>				
S	Not At All True	Slightly True	Moderately True	Very True	Extremely True
11	0.....	1.....	2.....	3.....	4.....
P	<b>When I have a decision to make, I try to predict the positive and negative consequences of each option.</b>				
S	Not At All True	Slightly True	Moderately True	Very True	Extremely True
12	0.....	1.....	2.....	3.....	4.....
P	<b>When problems occur in my life, I like to deal with them as soon as possible</b>				
S	Not At All True	Slightly True	Moderately True	Very True	Extremely True
13	0.....	1.....	2.....	3.....	4.....
P	<b>When i am trying to solve a problem, I go with the first good idea that comes to mind.</b>				
S	Not At All True	Slightly True	Moderately True	Very True	Extremely True
14	0.....	1.....	2.....	3.....	4.....
P	<b>When I am faced with a difficult problem, I believe that I will be able to solve it on my own if I try hard enough.</b>				
S	Not At All True	Slightly True	Moderately True	Very True	Extremely True
15	0.....	1.....	2.....	3.....	4.....
P	<b>When I have a problem to solve, one of the first things I do is get as many facts about the problem as possible.</b>				
S	Not At All True	Slightly True	Moderately True	Very True	Extremely True
16	0.....	1.....	2.....	3.....	4.....
P	<b>When I problem occurs in my life, I put off trying to solve it for as long as possible.</b>				
S	Not At All True	Slightly True	Moderately True	Very True	Extremely True
17	0.....	1.....	2.....	3.....	4.....
P	<b>I spend more time avoiding my problems than solving them.</b>				
S	Not At All True	Slightly True	Moderately True	Very True	Extremely True
18	0.....	1.....	2.....	3.....	4.....
P	<b>Before I try to solve a problem, I set a specific goal so that i know exactly what I want to accomplish</b>				
S	Not At All True	Slightly True	Moderately True	Very True	Extremely True
19	0.....	1.....	2.....	3.....	4.....

P S 2 0	When I have a decision to make, I do not take the time to consider the pros and cons of each option Not At All True      Slightly True      Moderately True      Very True      Extremely True 0.....1..... 2..... 3.....4.....
P S 2 1	After carrying out a solution to a problem, I try to evaluate as carefully as possible how much the situation has changed for the better. Not At All True      Slightly True      Moderately True      Very True      Extremely True 0.....1..... 2..... 3.....4.....
P S 2 2	I put off solving problems until it is too late to do anything about them. Not At All True      Slightly True      Moderately True      Very True      Extremely True 0.....1..... 2..... 3.....4.....
P S 2 3	When I am trying to solve a problem, i think of as many options as possible until I cannot come up with any more ideas Not At All True      Slightly True      Moderately True      Very True      Extremely True 0.....1..... 2..... 3.....4.....
P S 2 4	When making decisions, i go with my “gut feeling” without thinking too much about the consequences of each option. Not At All True      Slightly True      Moderately True      Very True      Extremely True 0.....1..... 2..... 3.....4.....
P S 2 5	I am too impulsive when it comes to making decisions Not At All True      Slightly True      Moderately True      Very True      Extremely True 0.....1..... 2..... 3.....4.....

**Workforce and School Participation** (McFarlane et al., 2012)

	During the last 4 months (date _____)	NO	YES
<b>WSP1</b>	Have you been employed? → (Count any part of the last 4 months)	0	1
<b>WSP2</b>	Do/Did you receive health insurance from an employer? →	0	1
<b>WSP3</b>	Type of Work? _____	Labor Code	
<b>WSP4</b>	Number of hours worked each week? ____ (an estimate is fine)		
<b>WSP5h</b>	Hourly wage \$_____ (an estimate is fine)		
<b>WSP6</b>	What type of work would you like to do? _____	Labor Code	
<b>WSP7</b>	Do/Did you go to school? → (Count any part of the last 4 months)	0	1
<b>WSP8</b>	Type of school (beauty, computer) _____	Labor Code	
<b>WSP9</b>	How many months until you complete the program ____		
<b>WSP10</b>	Would you like to go to school?	0	1
<b>WSP10a</b>	If YES, type of program _____	Labor Code	

**General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995)**

Item	Question	Not at all true	Hardly True	Moderately True	Exactly True
GSE1	I can always manage to solve difficult problems if I try hard enough.	1	2	3	4
GSE2	If someone opposes me, I can find the means and ways to get what I want.	1	2	3	4
GSE3	It is easy for me to stick to my aims and accomplish my goals.	1	2	3	4
GSE4	I am confident that I could deal efficiently with unexpected events.	1	2	3	4
GSE5	Thanks to my resourcefulness, I know how to handle unforeseen situations.	1	2	3	4
GSE6	I can solve most problems if I invest the necessary effort.	1	2	3	4
GSE7	I can remain calm when facing difficulties because I can rely on my coping abilities.	1	2	3	4
GSE8	When I am confronted with a problem I can usually find several solutions.	1	2	3	4
GSE9	If I am in trouble, I can usually think of a solution.	1	2	3	4
GSE10	I can usually handle whatever comes my way	1	2	3	4

**Social Support (Norbeck, Lindsey, & Carrieri, 1981)**

First Name		Relationship				COD E
Second Name		Relationship				COD E
Third Name		Relationship				COD E
	Thinking about ____ (FIRST person), During the last 4 months (date _____)	Not at all	A little	Mode rate	Quit e A bit	A Lot
SS1	How much does _____ make you feel liked or loved?	0	1	2	3	4
SS2	How much does _____ make you feel respected?	0	1	2	3	4
SS3	How much can you confide in _____ ?	0	1	2	3	4
SS4	How much does _____ agree with you?	0	1	2	3	4

SS5	If you needed to borrow \$10, a ride to the doctor, or other immediate help, how much could _____ help?	0	1	2	3	4
SS6	If you were confined to bed for several weeks, how much could _____ help you?	0	1	2	3	4
SS7	Have you shared the abuse with _____?	0	1	2	3	4
	<b>Thinking about _____ (SECOND person), Since the 36-Month Interview (date _____)</b>	<b>Not at all</b>	<b>A little</b>	<b>Moderate Amount</b>	<b>Quite A bit</b>	<b>A Lot</b>
SS8	How much does _____ make you feel liked or loved?	0	1	2	3	4
SS9h	How much does _____ make you feel respected?	0	1	2	3	4
SS10	How much can you confide in _____?	0	1	2	3	4
SS11	How much does _____ agree with you?	0	1	2	3	4
SS12	If you needed to borrow \$10, a ride to the doctor, or other immediate help, how much could _____ help?	0	1	2	3	4
SS13	If you were confined to bed for several weeks, how much could _____ help you?	0	1	2	3	4
SS14	Have you shared the abuse with _____?	0	1	2	3	4
	<b>Thinking about _____ (THIRD person), Since the 36-Month Interview (date _____)</b>	<b>Not at all</b>	<b>A little</b>	<b>Moderate</b>	<b>Quite A bit</b>	<b>A Lot</b>
SS15	How much does _____ make you feel liked or loved?	0	1	2	3	4
SS16	How much does _____ make you feel respected?	0	1	2	3	4
SS17	How much can you confide in _____?	0	1	2	3	4
SS18	How much does _____ agree with you?	0	1	2	3	4
SS19	If you needed to borrow \$10, a ride to the doctor, or other immediate help, how much could _____ help?	0	1	2	3	4
SS20	If you were confined to bed for several weeks, how much could _____ help you?	0	1	2	3	4
SS21	Have you shared the abuse with _____?	0	1	2	3	4

**Personal Progress Scale–Revised** (Johnson, Worell, & Chandler, 2005)

<b>Respond with 1 if the statement is ALMOST NEVER TRUE of you now, 7 if true of you ALMOST ALL THE TIME, and 2 through 6 if the statement is usually not true, sometimes true, or frequently true.</b>	
E1	I have equal relationships with important others in my life. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E2	It is important to me to be financially independent. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E3	It is difficult for me to be assertive with others when I need to be. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E4	I can speak up for my needs instead of always taking care of other people's needs. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E5	I feel prepared to deal with the discrimination I experience in today's society. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E6	It is difficult for me to recognize when I am angry. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E7	I feel comfortable in confronting my instructor/supervisor when we see things differently. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E8	I now understand how my cultural heritage has shaped who I am today. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E9	I give into others so as not to displease or anger them. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E10	I don't feel good about myself as a woman. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E11	When others criticize me, I do not trust myself to decide if they are right or if I should ignore them. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E12	I realize that given my current situation, I am coping the best I can. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E13	I am feeling in control of my life. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E14	In defining for myself what it means for me to be attractive, I depend on the opinions of others. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E15	I can't seem to make good decisions about my life. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7

E16	I do not feel competent to handle the situations that arise in my everyday life. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E17	I am determined to become a fully functioning person Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E18	I do not believe there is anything I can do to make things better for women like me in today's society. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E19	I believe that a woman like me can succeed in any job or career that I choose. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E20	When making decisions about my life, I do not trust my own experiences. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E21	It is difficult for me to tell others when I feel angry. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E22	I am able to satisfy my own sexual needs in a relationship. (I can say what I want and not want in my sexual relationship) Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E23	It is difficult for me to be good to myself. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E24	It is hard for me to ask for help or support from others when I need it. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E25	I want to help other women like me improve the quality of their lives. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E26	I feel uncomfortable in confronting important others in my life when we see things differently. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E27	I want to feel more appreciated for my cultural background. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7
E28	I am aware of my own strengths as a woman. Almost never True Usually Not True Sometimes True Frequently True Almost Always True 1.....2.....3.....4.....5.....6.....7