

# Determining the Underlying Dimensions of Economic Vulnerability of Women in the Unorganised Sector of Work: Factor Analysis of Muzaffarpur District

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## Abstract

The organized sector being the focus of the Indian women makes up a high percentage of the total workforce in India; however, they continue to face high levels of economic insecurity due to their constantly changing, temporary, often unstable employment status, poor working conditions as well as inadequate social security provisions. The current research paper attempts to determine the latent aspects of economic vulnerability of female workers who work in the unorganized sector of Muzaffarpur district. The study is based on the primary data obtained due to the use of the structured questionnaire that will be distributed among the female informal workers, who will be presented as the representatives of various branches of occupation. To define the latent pattern of economic vulnerability an Exploratory Factor Analysis (EFA) was used. The review uncovered four major dimensions of economic insecurity affecting the women and they were the economic and employment insecurity; poor conditions of working and threats to work-related health conditions; constraints in social and gender facets; and unpredictability in jobs and salaries. All these dimensions suggest that economic vulnerability cannot be explained by one or two factors but is formed by the combination of the financial, occupational, and social backgrounds. The results support the assumption that there are numerous latent factors that determine the economic vulnerability of female unorganized workers. The article provides empirical data at the district level and it emphasizes the need to have combined and gender sensitive policy measures so that more women can improve their income security, work stability and social safety net in the unorganized sector.

**Keywords:** Economic vulnerability, female workers, the unorganized sector, exploratory analysis factor, principal component analysis, the Muzaffarpur district, informal employment, gender inequality.

## Introduction

The unorganised sector in India comprises a large percentage of women making up most of the total employment in India. Informal employment is a leading form of livelihood among the women especially in the agricultural sector as well as domestic services, construction work,

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street vending, home based production and other casual employment of women in some districts like Muzaffarpur in Bihar. Women in the unorganised sector have been facing economic insecurity despite their visible role of contributing towards household income and local economic development. Their labor is traditionally marked by unstable and unpredictable income, seasonal labor, daily low payments, and the lack of formal and written contracts or agreements.

These women do not often get employment benefits like paid leaves, maternity protection, health insurance, pension programs, or workspace protection like the workers in the organised sector. In addition, they are also subjected to poor working conditions, excessive working hours, physical fatigue and exploitation by their employers. They are also not institutionalized, making them more vulnerable. Economic vulnerability is not simply a low income, thus, it includes not only the low income but also the instability of income, uncertainty of employment opportunities, indebtedness, poor working conditions, and lack of access to social security provisions. Moreover, their economic huddles are exacerbated by socio-cultural factors including limitations to mobility, gender pay gap, and unequal family and parenting duties.

### **Need for the Study**

The multidimensional and structural nature of economic vulnerability of women in the unorganised sector is inherent. It is the result of interplay of economic, occupational, social factors and not the result of one specific determinant. Despite the national-level statistics and policy reports and official documents on the perilous situation of informal workers in India, a relative lack of empirical research at a district level, which enables the systematic study of the dimensions of vulnerability, is evident, especially with the help of the most sophisticated statistical methods.

Muzaffarpur district is a relevant location to investigate such a question because a great part of the female labour force is limited to informal jobs and low-paid ones. There is a need to be aware of the factors that are particular to influence economic vulnerability within this local context, which would be used to design evidence based policies. Cure programs might not solve any problem without discovering the latent architecture of vulnerability and thus unable to solve the causes of the insecurity. Thus, the necessity to leave the sphere of descriptive analysis and shift to a more analytic approach that will help to reveal the underlying structural configurations of the economic situation of women is obviously present.

### **Intent and Critical Process.**

The main aim of the current project is to identify the underlying (latent) measurement of economic vulnerability among the female workers working in the unorganised sector in the Muzaffarpur district. In this regard, the study applies the Exploratory Factor Analysis (EFA), being a statistical method that recognizes groups of variables interrelated and reduces them to meaningful components. Factor analysis can be used to show bigger structural aspects that indicate economic vulnerability by lumping together indicators like income irregularities, job insecurity, hazardous working conditions, household debt, gender-based discrimination, and family cares.

This methodological strategy allows a more in-depth analysis of the interaction of financial instability, work hazards, and socio-cultural restraints to determine the way women live in the informal economy. It is likely that the results will offer district level empirical data that will help policymakers develop combined, gender sensitive interventions. Through a combination of economic insecurity, amelioration of working conditions, enhancement of social protection, and other issues that limit gender, sustainable enhancement of the livelihood of women in the unorganised sector can be realised.

### **Literature Review**

The current research would be considered an addition to the growing body of literature on the topic of viral marketing in anticipating the role of brand engagement and brand trust as the key psychological processes that social-media virality results in the impulse-buying attitude. Initial conceptual approaches to viral marketing defined eWOM as a powerful channel of diffusion in online communication (Kaplan and Hannell, 2010). Similarly, Hennig -Thurau et al. (2004) showed that word-of-mouth online has a significant influence on consumer attitudes and purchasing behavior. The strategic-management model by Porter (1985) also hints that competitive advantage in the current digital markets are more and more based on the relational and reputational assets and not functional features alone. In the context of social-media, it has been highlighted in a study by Mangold and Faulds (2009), that there has been a shift towards consumer-led communication versus firm-controlling communication and thus interaction through social-media has been placed as a circumstantial strategic measure.

The concept of brand engagement has been operationalised as a multidimensional concept that constitutes cognitive, affective and behavioural investment in brand interactions (Brodie et al., 2011). Later empirical studies by Hollebeek (2011) and Vivek et al. (2012) established that high levels of engagement strengthen brand loyalty, advocacy and purchase behaviour. Interactive behaviours of likes, shares, comments, and user-generated content tend to be visible signs of social validation, and often they are used as a metric of engagement in social-media settings (Dessart et al., 2015). These interactive behaviours, in turn, are enhanced by viral content, which creates a network effect that makes brand exposure and normative influence stronger (Berger and Milkman, 2012).

In line with engagement, brand trust has always been considered as one of the underlying factors in reducing the state of uncertainty in the online context. Trust was established by Morgan and Hunt (1994) as the central concept of relationship-marketing theory. Further research by Chaudhuri and Holbrook (2001) empirically attributed brand trust to purchase intentions and attitudinal loyalty. Regarding digital commerce, Gefen (2000) and Pavlou (2003) suggested that trust, where perceived risk exists, reduces this risk and promotes transactional intentions. More modern conclusions of Edelman (2010) and Laroche et al. (2012) accentuate the idea that in terms of trust development, the influence of social-media communications is significant with follow-up approval and clear communication.

The impulse-buying behaviour that was initially established by Rook (1987) refers to buying behaviour that is spontaneous, affective based, and is not made by thorough consideration. Beatty and Ferrell (1998) have also shown that impulsive tendencies are stimulated by

environmental prompt and affective stimuli. In the online setting, the research conducted by Verhagen and van Dolen (2011) established that impulse purchases were highly aroused through the design of the websites and the social interaction cues. Similarly, Chen et al. (2019) found that endorsements by social-media influencers and social-media stimuli cause impulsive purchases in digital natives.

Though such developments exist, much of the available literature is focused on how social-media marketing is directly related to purchase intention (Kim and 3), which gives relatively little consideration to the role of psychological processes within any particular emerging market. The empirical studies performed mainly in the Western setting (Hudson et al., 2016; Alalwan et al., 2017) indicate that the intervention of engagement and trust can be used, but there is a lack of empirical confirmation in regional Indian apparel markets.

The latter is emphasized in studies of Indian customers (Bansal et al., 2020; Kumar and Gupta, 2021) where the growing role of social-media influencers and localised electronic marketing-campaigns is noted, especially among young people in such states as Uttar Pradesh.

### **Research Methodology**

The descriptive and analytical research designs will be used in the current paper to study the economic vulnerability of women employed in the unorganized sector of Muzaffarpur district. The study is based on primary data acquired with the help of systematic questionnaires used by women informal workers who work in such spheres of activity as domestic, construction, agricultural, and street vendors. The questionnaire included those statements that included recurrence of incomes, stable employment, working conditions, financial strain, and social restraint that were measured through five-point Likert scale.

The data were filtered before analysis to make it appropriate to the factor analysis. Exploratory factor analysis (EFA) was used to establish the latent factors of economic vulnerability. The extraction process entailed Principal Component Analysis (PCA) and the Varimax factor rotation in order to have a better, simpler to interpret factor structure. Only variables which had strong factor loadings were interpreted. The obtained factors were subsequently interpreted and named based on the loaded variables. All the statistical tests were performed using the SPSS software and gave dependable and analytically valid results.

### **Research Objectives**

1. To determine the hidden aspects of economic vulnerability of female workers in the unorganized sector of Muzaffarpur district.
2. To use factor analysis to identify the economic, occupational and social indicators of coherent factors.
3. To determine the structural arrangement of economic vulnerability to the female informal workers.

### **Research Hypothesis**

**H<sub>1</sub>:** The complex factors that lead to the economic vulnerability of the female workers in the unorganized sector is manifold and it relies on their terms of employment, changeability of

income and social limitations.

## Results

**Table 1: KMO and Bartlett's Test**

|  |                    |          |
|--|--------------------|----------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. |                    | .775     |
| Bartlett's Test of Sphericity                    | Approx. Chi-Square | 3339.547 |
|  | df                 | 78       |
|  | Sig.               | .000     |

The KaiserMeyerOlkin (KMO) measure of sampling appropriateness and the Bartlett test of sphericity both prove that the dataset was sufficient to facilitate factor analysis. The KMO value of 0.775 justifies the reason why there is an acceptable sampling adequacy of the study to warrant rationale of inter-variable correlations being compact enough to yield latent variables. The general impression of factor analysis is too low as the KMO values below 0.70 are not considered to be reliable. Furthermore, the Bartlett Test of Sphericity showed a value that was very significant ( $\chi^2 = 3339.547$ , 78 =df,  $p= 0.001$ ) which states that the correlation matrix is not an identity matrix and that there is a significant inter-relationship between the variables. The null hypothesis in the test by Bartlett was rejected, and therefore, it proves the significant inter-relatedness of the variables. Collectively, the findings give good reasons as to why an Exploratory Factor Analysis (EFA) needs to be undertaken in order to reveal the latent dimensions that predispose female workers in the unorganized sector within the Muzaffarpur district.

**Table 2: Communalities**

|                            | Initial | Extraction |
|----------------------------|---------|------------|
| Irregular monthly income   | 1.000   | .923       |
| Low daily wages            | 1.000   | .869       |
| Uncertain job availability | 1.000   | .863       |
| Seasonal employment        | 1.000   | .657       |
| Long working hours         | 1.000   | .533       |
| Unsafe work environment    | 1.000   | .901       |
| Physical exhaustion        | 1.000   | .881       |
| No paid leave              | 1.000   | .696       |

|                            |       |      |
|----------------------------|-------|------|
| High household debt        | 1.000 | .722 |
| Family responsibilities    | 1.000 | .805 |
| Gender wage discrimination | 1.000 | .400 |
| Mobility restrictions      | 1.000 | .925 |
| Employer exploitation      | 1.000 | .877 |

Extraction Method: Principal Component Analysis.

The communalities table will display the variance in each variable that is being explained by the derived factors through the Principal Component Analysis (PCA). The values of the extraction are above 0.5 indicating that the factor solution represents most of the variables. Unsafe work environment (0.901), high communalities on irregular monthly income (0.923), physical exhaustion (0.881), employer exploitation (0.877), and mobility restrictions (0.925) are high with communalities that indicate that the variables are powerful contributors to factors underlying economic vulnerability. There is also a significant power of explanation of such variables as low daily wages (0.869), uncertain job availability (0.863), family responsibilities (0.805), and high household debt (0.722). The seasonal employment (0.657), no paid leave (0.696), and long working hours (0.533) moderate communalities point to the reasonable representation. Nevertheless, the communality of gender wage discrimination (0.400) is relatively lower, which is why such a factor is not well-explained by factors extracted. The findings in general confirm a sufficient and substantive factor structure.

**Table 3: Total Variance Explained**

| Component | Initial Eigenvalues |               |              | Extraction Sums of Squared Loadings |               |              | Rotation Sums of Squared Loadings |               |              |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|-----------------------------------|---------------|--------------|
|           | Total               | % of Variance | Cumulative % | Total                               | % of Variance | Cumulative % | Total                             | % of Variance | Cumulative % |
| 1         | 4.813               | 37.020        | 37.020       | 4.813                               | 37.020        | 37.020       | 4.338                             | 33.369        | 33.369       |
| 2         | 2.593               | 19.946        | 56.966       | 2.593                               | 19.946        | 56.966       | 2.019                             | 15.533        | 48.902       |
| 3         | 1.637               | 12.590        | 69.556       | 1.637                               | 12.590        | 69.556       | 1.863                             | 14.333        | 63.235       |
| 4         | 1.010               | 7.771         | 77.327       | 1.010                               | 7.771         | 77.327       | 1.832                             | 14.092        | 77.327       |
| 5         | .871                | 6.699         | 84.026       |                                     |               |              |                                   |               |              |
| 6         | .664                | 5.107         | 89.133       |                                     |               |              |                                   |               |              |
| 7         | .394                | 3.031         | 92.164       |                                     |               |              |                                   |               |              |

|    |      |       |         |  |  |  |  |  |  |
|----|------|-------|---------|--|--|--|--|--|--|
| 8  | .328 | 2.522 | 94.687  |  |  |  |  |  |  |
| 9  | .299 | 2.296 | 96.983  |  |  |  |  |  |  |
| 10 | .205 | 1.580 | 98.563  |  |  |  |  |  |  |
| 11 | .101 | .778  | 99.341  |  |  |  |  |  |  |
| 12 | .068 | .522  | 99.863  |  |  |  |  |  |  |
| 13 | .018 | .137  | 100.000 |  |  |  |  |  |  |

Extraction Method: Principal Component Analysis.

According to the Total Variance Explained table, four components were taken into consideration to be analyzed, according to the eigenvalue more than one criterion. The combination of these four elements is attributed to 77.33 percent of the total variance which is regarded to be very strong in social science research. The former is explained by the first component that contributes 37.02% of the variance, meaning that it is the most dominant influence of economic vulnerability in terms of female workers. The second component accounts 19.95, the third (12.59) and fourth (7.77) component accounts 19.95, 12.59 and 7.77, respectively, which is multidimensional. The variance is also more spread out in the four components (33.37, 15.53, 14.33, and 14.09) after rotation, which increases the interpretability but has no effect on the cumulative variance. Particular elements that have eigenvalues less than one and add a marginal variance were eliminated. On the whole, the findings prove that economic vulnerability of women in the unorganized sector is also dependent on several underlying dimensions, which justifies the factor analysis application and gives the strength of the factor structure to carry on with the interpretation and policy analysis.

**Table 4: Component Matrix**

|                            | Component |      |      |   |
|----------------------------|-----------|------|------|---|
|                            | 1         | 2    | 3    | 4 |
| Irregular monthly income   | .893      |      |      |   |
| Low daily wages            |           | .707 |      |   |
| Uncertain job availability |           | .683 |      |   |
| Seasonal employment        | .717      |      |      |   |
| Long working hours         | .680      |      |      |   |
| Unsafe work environment    |           | .717 |      |   |
| Physical exhaustion        |           | .698 |      |   |
| No paid leave              |           |      | .717 |   |

|                            |      |  |      |  |
|----------------------------|------|--|------|--|
| High household debt        | .782 |  |      |  |
| Family responsibilities    |      |  | .739 |  |
| Gender wage discrimination |      |  | .556 |  |
| Mobility restrictions      | .894 |  |      |  |
| Employer exploitation      | .870 |  |      |  |

Extraction Method: Principal Component Analysis.<sup>a</sup>

a. 4 components extracted.

The Component Matrix shows there was a distinct four factor structure as to why women workers in the unorganized sector are economically vulnerable. In component 1, the loadings of irregular monthly income (0.893), seasonal employment (0.717), high household debt (0.782), mobility restrictions (0.894), and employer exploitation (0.870) are high and show the presence of a dominant factor of economic and employment insecurity. The high score of component 2 on low daily wages (0.707), uncertain job availability (0.683), unsafe work environment (0.717), and physical exhaustion (0.698) indicates poor working conditions and stress associated with wages. The social and gender-based restraints component 3 has no paid leave (0.717), family responsibilities (0.739), and gender wage discrimination (0.556). Workload pressure is a separate dimension observed in component 4, which is principally characterized by long working hours (0.680). In general, the matrix proves that economic vulnerability is multi-dimensional based on interconnected financial, occupational, and social aspects.

**Table 5 : Rotated Component Matrices**

|                            | Component |      |      |      |
|----------------------------|-----------|------|------|------|
|                            | 1         | 2    | 3    | 4    |
| Irregular monthly income   | .947      |      |      |      |
| Low daily wages            |           |      |      | .890 |
| Uncertain job availability |           |      |      | .887 |
| Seasonal employment        | .699      |      |      |      |
| Long working hours         | .637      |      |      |      |
| Unsafe work environment    |           | .902 |      |      |
| Physical exhaustion        |           | .893 |      |      |
| No paid leave              |           |      | .823 |      |
| High household debt        | .847      |      |      |      |

|                            |      |  |      |  |
|----------------------------|------|--|------|--|
| Family responsibilities    |      |  | .867 |  |
| Gender wage discrimination |      |  | .595 |  |
| Mobility restrictions      | .948 |  |      |  |
| Employer exploitation      | .927 |  |      |  |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.<sup>a</sup>

a. Rotation converged in 5 iterations

The Rotated Component Matrix (Varimax rotation) gives a more explicit and understandable factor model of the determinants of economic vulnerability among workers in the unorganized sector that are females. In Component 1, the loading of irregular monthly income (0.947), seasonal employment (0.699), high household debt (0.847), mobility restrictions (0.948) and employer exploitation (0.927) is very high, which means that a stronger factor exists that can be termed as Economic and Employment Insecurity. Unsafe work environment (0.902) and physical exhaustion (0.893), which reflect the concept of Poor Working Conditions and Occupational Health Risks, are strongly defined as component 2. The High loaded aspects of Component 3 are no paid leave (0.823), family responsibilities (0.867), and gender wage discrimination (0.595), which represent the aspects of Social and Gender-based Constraints. The strong loadings of low daily wages (0.890) and uncertain job availability (0.887) are the characteristics of Component 4 that indicate a focus on the problem of Wage and Job Instability. In general, the rotated solution substantiates the idea that an economic vulnerability is a multi-dimensional phenomenon, defined by financial, occupational, and social factors, and the rotation contributes to a much higher level of clarity, without diminishing the explanatory power.

### Findings of the Study

According to the objectives of the study, the factor analysis provided four different underlying dimensions that describe the economic vulnerability of the female workers in the unorganized sector of Muzaffarpur district. The initial sphere is connected with economic and job security and includes such topics as inconsistent earning, seasonality of the working process, debt, lack of mobility, and exploitation of employees by their employers. This observation brings out the instability of the structure of casual work and that constitutes a significant portion of economic security among women.

The second dimension demonstrates the lack of good working conditions and occupational health threat, which is characterized by hazardous working conditions and physical fatigue, meaning that vulnerability is not based only on income related aspects but also on health and safety issues. The third dimension reflects social and gender based restrictions, such as no paid leave, family duty, and gender wage disparity, and establishes the role of social roles and gender inequalities in exacerbating economic vulnerability. The fourth dimension is wage and job instability, which is low daily wages and job insecurity, which supports the precarious

informal employment. Taken together, these results confirm the research objective, which is to determine the latent factors affecting economic vulnerability, and they prove the hypothesis of the study according to which economic vulnerability of female informal workers is not determined by one factor, but by a group of interrelated dimensions.

### **Conclusion**

Judging by the aims and the hypothesis of the study, it could be concluded that economic vulnerability of female workers in the unorganized sector of Muzaffarpur district is multifaceted and structural in nature. The definition of four underlying dimensions proves the economic insecurity of women is the result of a combination of unstable employment, poor working conditions, social limitations, and uncertainties concerning salaries. This economic and employment insecurity highlights how unstable informal work arrangements are in the sense that income insecurity, as well as exploitation by the employer, is prevalent. Also, the vulnerability is increased by the poor working conditions and occupational health risk, which lower the work capacity and add physical stress.

Women are still restricted in their economic activities and career progress through social and gender-based limitations especially domestic duties which are not paid and gender-based pay discrimination. The problem of wage and job instability is still a long-term one, which testifies to the lack of formal labour protections in the unorganized sector. The fact that on several occasions, several latent factors were confirmed, proves the hypothesis of the study and strengthens the necessity of a complex policy intervention. Comprehensively, the research paper is valuable in that it provides meaningful district-level empirical evidence and highlights that the issue of economic vulnerability in female unorganized workers can be effectively addressed through holistic, gender-sensitive, and sector-specific solutions as opposed to individual solutions.

### **Suggestions**

According to the results, there are a number of policy and practical interventions which are suggested to curb economic vulnerability amongst female workers in the unorganized sector. To begin with, there should be an attempt to increase income stability by enforcing minimum wage, skills development, and availability of diversified job opportunities. Second, there is a need to improve working conditions; this involves providing safety at the workplace, control of working hours as well as basic health and sanitation facilities. Third, economic insecurity would be minimized through the expansion of social protection systems including paid leaves, health care insurance, maternity benefits and pension programs. Fourth, sex-based limitations, such as salary disparity and mobility limitation, need to be overcome by specific interventions in the form of awareness and legislative protection. Women can manage debt and accumulate savings through financial inclusion programs including access to formal banking, credit access and financial literacy education. Besides this, the local governments and non-governmental organizations must work together to establish community-based support systems to reduce the burden of the household duties. Lastly, in designing future policies it should take an integrated approach which would be addressing the economic, occupational and social aspect as

recognized in this paper in order to have sustainable change in the livelihoods of women in the unorganized workforce.

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