

# A predictive analysis to determine the relationship between work engagement and outcomes of programs

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## Abstract

**Purpose** – The study has made an effort to investigate how handloom weavers' work engagement is affected by the benefits of the comprehensive handloom cluster development scheme (CHCDS). The program primarily focuses on work-related issues, including improved technical infrastructure, skill upgradation to deliver higher-quality products and market development to improve remuneration. The purpose of this research is to determine whether the scheme's work-related support is associated with employee engagement.

**Design/methodology/approach** – A cross-sectional survey design was implemented on a sample size of 335 individual handloom weavers. The benefits of CHCDS (BoS) were measured using exploratory factor analysis on SPSS 25 and validated using confirmatory factor analysis. Structural equation modelling on the Amos 22 platform was used to evaluate the effect of the scheme on work engagement.

**Findings** – The results indicated a significant positive association between work engagement and the BoS, with  $R^2$  value of 0.35 at a significance level of  $p < 0.001$ .

**Research limitations/implications** – The study adds to the multidimensional approach of work engagement given by Saks (2006) by contextualising it into one of the Indigenous sectors, like the handloom. The study also finds applicability in labour economics.

**Practical implications** – The findings point to market development and skill upgradation as the benefit dimensions most strongly associated with engagement. Policymakers can prioritise these components.

**Originality/value** – This study offers a contextual contribution by being the first to empirically examine the association between the benefits of a scheme and work engagement. The originality lies in the application and extension of established frameworks – the job demands-resources model and Saks's (2006) to an underrepresented sector.

**Keywords** Data analytics, Decision-making, Handloom weaving, Labour economics, Labour mobility, Work engagement, Work-related well-being

**Paper type** Research article

## Introduction

The Indian handloom sector is among the most ancient and symbolically significant craft industries in the world (Bagchee, 2018), with weaving traditions documented in foundational historical texts (Soundarapandian, 2002). Despite its cultural heritage, the sector confronts persistent structural challenges: low wages, hazardous working conditions, inadequate ventilation and lighting, volatile raw material prices and limited awareness of market demand (Goswami and Jain, 2014). As of January 2025, India's handloom exports stood at USD 192m (GoI, 2025), yet this economic contribution coexists with a documented exodus of weavers toward alternative livelihoods, driven by resource scarcity and occupational disenchantment

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(Bhattacharya and Sen, 2019). Recognising this, the Government of India has launched targeted welfare schemes to strengthen weaver livelihoods and preserve the craft (GoI, 2018). The Comprehensive Handloom Cluster Development Scheme (CHCDS) is one such intervention that provides cluster-based resource support across technical infrastructure, skill training, market linkages, raw material supply and basic amenities (GoI, Ministry of Textiles, 2017). Yet the psychological impact of these resources on weavers' engagement with their work remains empirically unexamined.

This study addresses this gap by asking: to what extent are the perceived benefits of the CHCDS associated with work engagement among handloom weavers? Drawing on the job demands-resources (JD-R) model (Demerouti *et al.*, 2001) and Saks's (2006) multidimensional approach to engagement, we conceptualise CHCDS benefit dimensions as external job resources that may activate the motivational pathway toward vigour, dedication and absorption. The paper proceeds as follows: Section 2 reviews the literature on work engagement and its predictors, culminating in the study hypothesis. Section 3 describes the research methodology. Sections 4 and 5 present the data analysis and findings. Sections 6 and 7 discuss theoretical and policy implications, and Section 8 concludes with limitations and directions for future research.

Note: The Benefits of Comprehensive Handloom Cluster Development Scheme were abbreviated as benefits of CHCDS (BoS) in the study.

Work engagement is abbreviated as WE Skill-upgradation is abbreviated as SU Market Development is abbreviated as MD Basic Infrastructure is abbreviated as BI Vigour is abbreviated as VIG. Absorption is abbreviated as ABS. Dedication is abbreviated as DED.

### Motivation for the research

The work was carried out in Varanasi because it is one of the eight mega handloom clusters designated by the Government of India. The Geographical Indication certification has been an advantage for Banarasi saris since 2009 (GoI, 2019). The weavers are the men behind this unmatched intricacy. Though this sector is unorganised and much of the weaving work is done in households, it still ranks second in employment generation after the agriculture sector. The sector has immense potential, as the production process is eco-friendly, with no emissions involved.

Notwithstanding its substantial contribution, the handloom sector confronts numerous difficulties. Poor working conditions, low pay, a lack of technological innovation, changing raw material prices, a lack of market awareness and ergonomic concerns are the main problems faced by handloom weavers (Goswami and Jain, 2014; Durlov *et al.*, 2014). Through the implementation of numerous programs, the Indian government plays a vital role in maintaining this industry. The majority of these programs are employment resource-centric, meaning they seek to offer resources that facilitate weaving (GoI, 2020). Both demands and resources can have an impact on employees' health and well-being, according to Demerouti *et al.*'s (2001) JD-R model.

The JD-R model's versatility allows it to be used across a wide range of job environments. Two psychological processes comprise this theory: (1) poorly planned or demanding employment deteriorates workers' physical and mental well-being, resulting in health problems (Demerouti *et al.*, 2000, 2001), and (2) job resources are effective in motivating workers, which boosts engagement and output (Bakker, 2017).

A data-driven associational approach can meaningfully inform policy efforts to address weaver mobility. Dey *et al.* (2023) applied data envelopment analysis to demonstrate technical efficiency patterns among handloom micro-enterprises in Assam, illustrating the potential of quantitative methods in the sector. Singhvi and Singhvi (2024) further demonstrate that analytics and operational frameworks can identify productivity constraints among artisans. Extending this analytical tradition to the domain of work engagement offers a psychologically grounded, resource-based perspective on the weaver retention challenge.

The relationship between the perceived benefits of government welfare schemes and work engagement has not previously been examined in the handloom sector. This study addresses

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that gap by positioning policy-provided resources as a contextual correlate of engagement. While other individual, social and contextual factors undoubtedly contribute to weaver engagement, the present study focuses on scheme benefits as one theoretically motivated determinant. This associational, data-driven approach represents a contextual contribution to engagement research in the unorganised sector.

## Literature review

### *Work engagement*

Work engagement is a central construct in the psychology of work and well-being. Kahn (1990) first conceptualised engagement as the harnessing of oneself in a work role, emphasising the psychological presence and full expression of energy, cognition and affect in task performance. Building on this, Schaufeli *et al.* (2002) operationalised work engagement as a positive, fulfilling and persistent work-related state characterised by three dimensions: vigour, dedication and absorption. Vigour reflects the energy and mental resilience that workers bring to their tasks; dedication captures a strong sense of involvement, enthusiasm and pride and absorption describes a deep, focused immersive state in work activities. Work engagement enhances individual well-being in the workplace (Schaufeli, 2013) and is positively associated with task and contextual performance (Christian *et al.*, 2011). Bakker *et al.* (2014) and Magnan *et al.* (2016) underscore that engagement is not merely the absence of negative states but constitutes a distinct positive experience with intrinsic motivational value.

A critical conceptual distinction in the engagement literature is between work engagement and employee engagement. Saks (2006, p. 602) defined employee engagement as “a distinct and unique construct consisting of cognitive, emotional and behavioural components that are associated with individual role performance,” encompassing both job and organisational dimensions. By contrast, Schaufeli and Salanova (2011) frame work engagement as the individual’s psychological relationship with the work itself – the task, craft or occupation – rather than with the employing organisation. This distinction is critical for the present study: handloom weavers in the unorganised sector operate with limited formal organisational attachment, making work engagement – their relationship with the craft of weaving – the theoretically appropriate construct. The three dimensions of work engagement (Schaufeli *et al.*, 2002; Soh *et al.*, 2016) are particularly well-suited to this context: vigour captures the stamina required for 10–12-h weaving shifts; dedication reflects the cultural pride and craft identity that sustains commitment and absorption describes the acute, undivided attention that flawless pattern execution demands.

The multidimensional approach thus provides a theoretically sound lens for studying handloom weavers. The artisanal nature of their labour – task-intimate, physically demanding and culturally embedded – aligns naturally with all three engagement dimensions. Research in comparable informal and manual-intensive settings supports this alignment: Buitendach *et al.* (2016) found that engagement in the semi-formal public transport sector was primarily shaped by proximal task conditions rather than organisational policies, suggesting that in resource-constrained environments, tangible resource access maps directly onto engagement. Airila *et al.* (2012) similarly demonstrated that in physically demanding occupations, adequate bodily and instrumental resources are primary engagement drivers. These findings suggest that CHCDS benefits, as external resource provisions, may meaningfully activate the engagement pathway in the handloom context.

### *Outcomes of work engagement*

The outcomes of employee engagement result in organisational success and financial performance (Harter *et al.*, 2002). Work engagement stimulates a feeling of cooperation among the team. The existence of excitement and pleasure related to the object of engagement is what defines affective engagement Attridge (2009) and (Koronios *et al.*, 2025). Various studies have also indicated that engaged employees show higher job satisfaction and an

emotional and motivational commitment (Schaufeli and Bakker, 2004). Work engagement leads to job satisfaction and reduces the intent to leave (Saks, 2006). The engaged employee tends to develop a helping behaviour toward his colleagues, and thus, the overall team performance is enhanced (Tims *et al.*, 2013; Costa *et al.*, 2015). Organisational performance has been said to have improved in the banking sector when employees are engaged (Muduli *et al.*, 2016). The existing literature predominantly examines formal and structured work environments, leaving a critical gap in understanding engagement dynamics within unorganised, labour-intensive sectors. This gap is particularly significant given the scale and cultural importance of artisanal industries in South and Southeast Asia and given evidence that engagement is a meaningful predictor of labour retention and absenteeism (Saks, 2006; Hardy *et al.*, 2003) – outcomes with direct relevance to the handloom sector's weaver mobility problem.

#### *Predictors of work engagement*

The JD-R model provides the primary theoretical framework for understanding the predictors of work engagement. The model posits that job resources – physical, psychological, social or organisational aspects of the job that facilitate goal attainment, reduce demands or stimulate personal growth – activate a motivational process that sustains engagement (Bakker *et al.*, 2014). Empirically, resource-enriching human resource (HR) practices such as job redesign positively predict engagement by expanding the resource profile of jobs (Alfes *et al.*, 2013; Holman and Axtell, 2016). Improvements in the physical work environment – better ergonomics, adequate tools and reduced physical hazards – also enhance engagement, particularly in manual and craft-based occupations where bodily demands are high.

A plethora of research on employee engagement has been conducted across various organised industries and sectors. A study conducted in the service sector (banking and insurance) in eastern India is one such example. Here, streamlined HR practices, growth opportunities and transparency in the selection process help enhance employee engagement, thereby maintaining trust in management (Jena *et al.*, 2018).

Collectively, the evidence reviewed above establishes two foundational conclusions: (1) government schemes and resource-provision programmes are associated with enhanced work engagement, mediated by developmental and motivational mechanisms consistent with JD-R logic and (2) work engagement and employee engagement are conceptually distinct, with the former being more appropriate in task-centred, craft-based and unorganised work settings. No study to date has examined this association specifically in the handloom sector, despite the craft's demanding attentional requirements (precision pattern work), physical intensity (extended loom operation) and documented resource scarcity. The present study addresses this gap by positioning the perceived benefits of the CHCDS as a composite resource variable and examining its cross-sectional association with vigour, dedication and absorption among scheme beneficiaries in Varanasi.

#### **Theoretical background of the study**

Three theoretical approaches to work engagement have been developed in the literature, each with distinct implications for the present study.

- (1) The needs-satisfying approach: According to Kahn (1990), engagement is the expression and getting involved in the roles that are given at the workplace. Another approach is the burnout-antithesis approach, which means that engagement is the complete inverse of burnout. Here again, this approach bifurcates, which means that more engaged people face negative burnout. The satisfaction-engagement approach, which considers satisfaction, enthusiasm and the employee's level of involvement with his/her job (Harter *et al.*, 2002).

- (2) The multidimensional approach discusses the difference between organisational engagement and work engagement. [Saks \(2006\)](#) considered employee engagement as a unique and altogether different dimension, which is made up of emotional, behavioural and cognitive parameters, which are correlated with one's task performance.
- (3) Employee engagement is a concept that includes the employee's occupational role, relationship with the organisation where the individual works, whereas work engagement refers to the individual's work ([Schaufeli, 2013](#); [Schaufeli and Salanova, 2011](#)). The work cited above gave a clear indication of the existence of two different concepts.

The JD-R model grounds the theoretical contribution of this study. Work engagement fluctuates in line with the availability of job resources ([Bakker, 2014](#); [Bakker et al., 2014](#)): workers who perceive adequate access to equipment, information, developmental opportunities and social recognition are more likely to invest energy and attention in their tasks. In the handloom context, the CHCDS is designed precisely to strengthen this resource environment. Its five benefit dimensions – technical infrastructure, skill upgradation, market development, raw material support and basic infrastructure – map directly onto the JD-R resource categories that have been shown to sustain vigour, dedication and absorption in empirical engagement research. Engaged employees also demonstrate reduced turnover intention ([Allen et al., 2003](#)) and greater proactive and creative behaviour ([Gawke et al., 2017](#)), outcomes with direct relevance to the handloom sector's retention and quality challenges.

### Hypothesis development

The scheme focuses on facilitating the weavers with all the resources needed to carry out the handloom weaving. Engaged workers ought to have more creative minds with more innovative ideas ([Gawke et al., 2017](#)). Handloom weaving is one such area where attention and diligence to work is the utmost important; therefore, the work engagement concept was taken up. There has been ample research done on employee engagement, i.e. from the perspective of the organisation in different organised sectors such as the banking sector ([Muduli et al., 2016](#)), higher educational institutes ([Nazir and Islam, 2017](#)) and service sector ([Jena et al., 2017](#)). This study is an attempt to explore the aspects of work engagement from the perspective of the weavers, i.e. how much they are engaged in their work/job. Therefore, the authors had tried to figure out whether schemes by providing access to necessary resources for weaving affect engagement in handloom weavers or not.

There is even an additional reason to investigate the idea of work engagement. According to [Soh et al. \(2016\)](#), work-related well-being is currently evolving into a distinct concept. Absence behaviour is successfully predicted by it ([Hardy et al., 2003](#)). Prior research on job satisfaction was the only application of well-being measures in labour economics; however, recent studies support the use of the entire notion of work-related well-being in labour economics ([Green, 2010](#)). Scales of work-related well-being may be a more accurate measure of workplace well-being, which would help policymakers create policies.

- H1.* The benefits of CHCDS are positively associated with work engagement among handloom weavers.

### Research methodology

#### *Method*

*Participants and procedure.* This work was carried out in eastern Uttar Pradesh, one of the mega handloom clusters. The survey design was cross-sectional. Registered weavers involved in handloom production, who were beneficiaries of the scheme, were approached. There are 10 clusters in Varanasi comprising around 3,500–4,000 handloom weavers. The researcher

randomly approached 353 weavers, of whom 335 agreed to be part of the survey. The questions were divided into two sections: the first part was about demographics, and the second was about the BoS and work engagement. The answers were rated on a Likert scale. Of the 335 weavers, 26% (87) were 10th pass, 43% (143) had studied below class 10, 25% (84) were 12th pass and the remaining 6% were graduates (20 weavers). The average age was 29, with a standard deviation of 6.3. The average years of weaving experience was 11, with a standard deviation of 5.4 years. Male weavers were the participants in the survey, as female weavers are mostly involved in home-based activities related to weaving [Asia Monitor Resource Centre, \(2008\)](#).

### *Overview of CHCDS*

The goal is the creation of mega handloom clusters that are situated in plainly recognisable topographical areas that work on specialised products. The scheme helps the weavers by facilitating them with vital infrastructure, with better storage spaces, assistance in handloom weaving activities, providing a work shed, skill enhancement and training support. This would help to meet the insightful and changing market needs at the national and global levels. This kind of support will eventually empower them and make them a visible entity with better well-being and improved standard of living [\(GoI, Ministry of Textiles, 2017\)](#).

*Measurement instruments applied.* The Utrecht Work Engagement Scale (UWES-9) [\(Schaufeli et al., 2002\)](#) was used as an engagement measuring tool. The scale measures engagement at a psychological level and therefore appeared appropriate to measure individual engagement and also demonstrates higher validity [Viljevac et al. \(2012\)](#). The responses were marked on a Likert five-point scale ranging from 1, i.e. “strongly disagree” to 5 representing “strongly agree”.

In order to measure the BoS, the BoS scale was used [\(Singh, 2025\)](#). The scale was developed and validated on handloom weavers. The answers were marked on a five-point Likert scale. The constructs of the measurement scale were named in line with the objective heads mentioned in the reports released by the government [\(GoI, 2018\)](#).

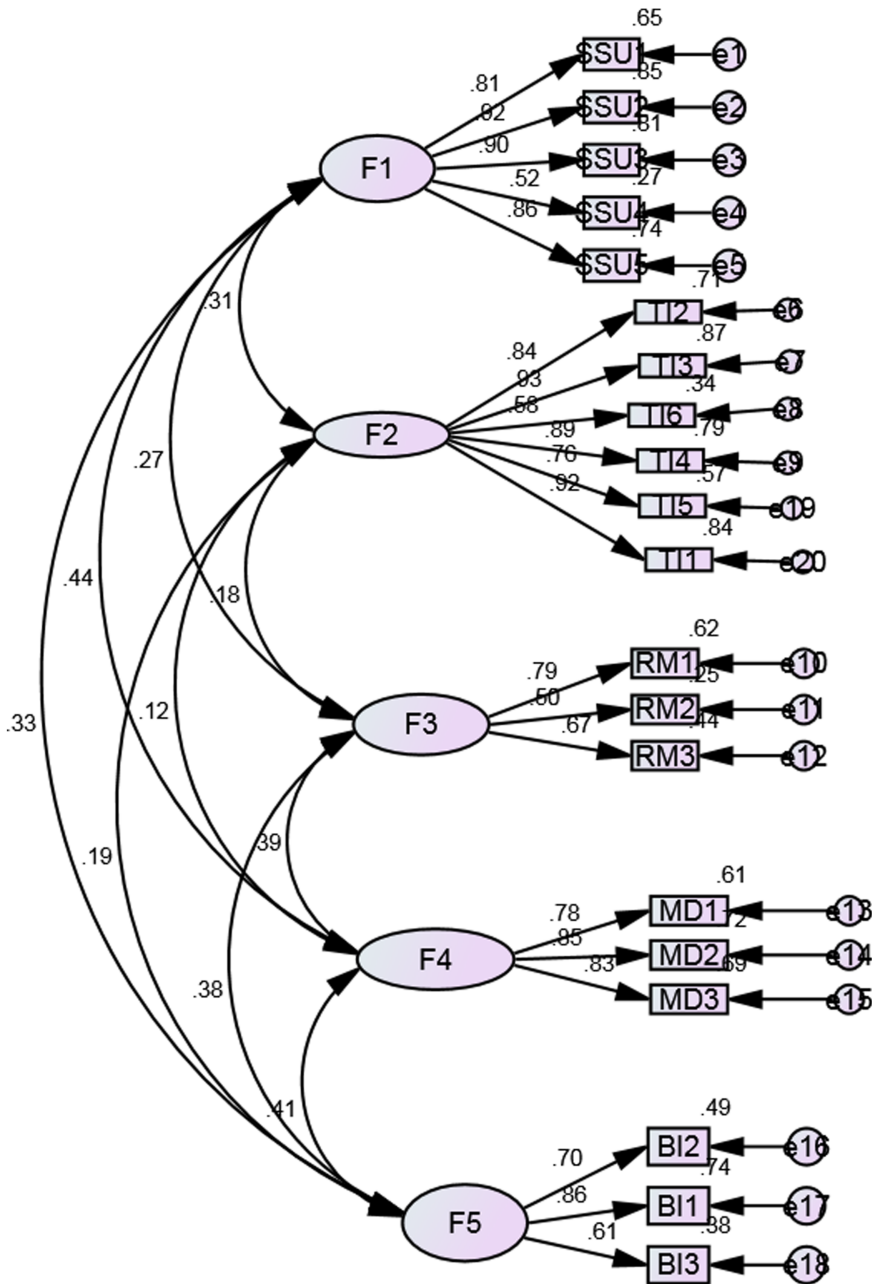
### **Data analysis**

#### *Reliability, validity and measurement model*

The first step in the data analysis process was determining the scale’s dependability, which was done on a sample of 62 during the pre-testing phase. Cronbach’s alpha value, which indicates a scale’s reliability, should be sufficient to forecast the internal consistency of the measuring device. Although values above 0.7 are acceptable, values above 0.6 are also taken into consideration [\(Taber, 2018\)](#). Cronbach’s alpha values for work engagement and the BoS scale were 0.797 and 0.874, respectively.

The value of the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was found to be 0.846 for the BoS scale and 0.682 for the UEWS scale, which predicted the sample size to be commensurable. The value of KMO should range between 0 and 1. The lowest value that can be used to do factor analysis is 0.6 [\(Madanchian et al., 2018\)](#).

Confirmatory factor analysis (CFA) was done for both the scales on the Amos 22 platform, which helped to confirm and validate the constructs. The CFA results of the BoS scale are depicted in [Figure 1](#). Construct validity is made up of convergent validity and discriminant validity. In order to establish the validity of the scale, the values of composite reliability (CR), average variance extracted (AVE), measure share variance (MSV) and average shared variance (ASV) are taken into consideration. For convergent validity,  $AVE > 0.5$ ,  $CR > 0.7$  and for discriminant validity,  $MSV < AVE$  and the square root of AVE should be greater than the inter-construct correlation. The measurement scales were validated in the current context. The values gave a fair idea that the measurement scales were valid and possessed good psychometric properties in the current context [\(Tables 1 and 2\)](#). The model fit values indicated a good fit for both scales. The model fit values for BoS were (chi-square minimum discrepancy



**Figure 1.** Confirmatory factor analysis for the BoS measurement scale, which gave five factor models. Here, F1 refers to technical infrastructure support, F2 refers to skill upgradation support, F3 refers to raw material support, F4 refers to market development support and F5 refers to basic infrastructure and social support. Source: Computed by author

**Table 1.** Validity and factor loadings for the benefits of CHCDS measuring instrument

| Constructs                             | Items  | Factor loadings | Composite reliability (CR) | Average variance extracted (AVE) | Maximum shared variance (MSV) | Average share variance (ASV) |
|--|--------|-----------------|----------------------------|----------------------------------|-------------------------------|------------------------------|
| Technical infrastructure support       | INFRA1 | 0.916           | 0.938                      | 0.717                            | 0.096                         | 0.040                        |
|  | INFRA2 | 0.891           |                            |                                  |                               |                              |
|  | INFRA3 | 0.882           |                            |                                  |                               |                              |
|  | INFRA4 | 0.854           |                            |                                  |                               |                              |
|  | INFRA5 | 0.820           |                            |                                  |                               |                              |
|  | INFRA6 | 0.703           |                            |                                  |                               |                              |
| Skill upgradation and training support | SU1    | 0.893           | 0.909                      | 0.670                            | 0.193                         | 0.113                        |
|  | SU2    | 0.866           |                            |                                  |                               |                              |
|  | SU3    | 0.865           |                            |                                  |                               |                              |
|  | SU4    | 0.793           |                            |                                  |                               |                              |
|  | SU5    | 0.655           |                            |                                  |                               |                              |
| Market development                     | MD1    | 0.852           | 0.835                      | 0.628                            | 0.168                         | 0.107                        |
|  | MD2    | 0.837           |                            |                                  |                               |                              |
|  | MD3    | 0.832           |                            |                                  |                               |                              |
| Basic infrastructure support           | BI1    | 0.819           | 0.801                      | 0.573                            | 0.152                         | 0.093                        |
|  | BI2    | 0.798           |                            |                                  |                               |                              |
|  | BI3    | 0.761           |                            |                                  |                               |                              |
| Raw material support                   | RM1    | 0.806           |                            |                                  |                               |                              |
|  | RM2    | 0.765           |                            |                                  |                               |                              |
|  | RM3    | 0.698           |                            |                                  |                               |                              |

**Source(s):** Computed by author

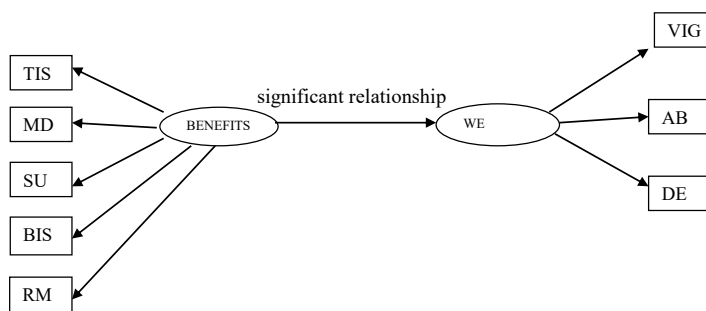
**Table 2.** Validity and factor loadings for the work engagement measuring instrument

| Name of variable | Construct  | Items | Standard factor loading | Composite reliability (CR) | Average variance extracted (AVE) | Maximum shared variance (MSV) | Average shared variance (ASV) |
|------------------|------------|-------|-------------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|
| Work engagement  | Absorption | AB-1  | 0.947                   | 0.839                      | 0.636                            | 0.036                         | 0.024                         |
|                  |            | AB-2  | 0.946                   |                            |                                  |                               |                               |
|                  |            | AB-3  | 0.787                   |                            |                                  |                               |                               |
|                  | Vigour     | VI1   | 0.851                   | 0.843                      | 0.642                            | 0.036                         | 0.032                         |
|                  |            | VI2   | 0.844                   |                            |                                  |                               |                               |
|                  |            | VI3   | 0.765                   |                            |                                  |                               |                               |
|                  | Dedication | Ded1  | 0.842                   | 0.804                      | 0.580                            | 0.028                         | 0.021                         |
|                  |            | Ded2  | 0.787                   |                            |                                  |                               |                               |
|                  |            | Ded3  | 0.724                   |                            |                                  |                               |                               |

**Source(s):** Computed by author

(CMIN) = 387.611, CMIN divided by degrees of freedom (CMIN/DF) = 2.423, goodness of fit index (GFI) = 0.902, normed fit index (NFI) = 0.910, root mean square error of approximation (RMSEA) = 0.055, comparative fit index (CFI) = 0.944) and for work engagement scale (CMIN = 63.981, CMIN/DF = 2.666, GFI = 0.957, NFI = 0.918, RMSEA = 0.052 and CFI = 0.953 (Tables 1 and 2).

In order to evaluate the model, the relationship between job engagement and the BoS was analysed using structural equation modelling (SEM). The proposed hypothetical model is depicted in Figure 2. The AGFI's value is 0.85. A good fit is defined as GFI and CFI values greater than 0.95, and an acceptable fit is defined as values larger than 0.9. It is advised that the RMSEA value be less than 0.5 for a good fit and 0.05 for a model to be acceptable (Maulana and Rufaidah, 2014). For the benefits of the CHCDS measurement tool (BoS scale), work engagement and the SEM model for association analysis, all of the model fit indices utilised had values below the



**Figure 2.** Proposed hypothetical model representing the association between benefits of CHCDS and work engagement. Note: TIS - technical infrastructure support, MD - market development, SU - skill upgradation, BIS - basic infrastructure and social support, RM - raw material support, VIG - vigour, ABS - absorption, DED - dedication and WE - work engagement. **Source:** Computed by author

specified level (Table 3). Table 4 indicates a significant association between work engagement and the BoS. The values of all the model fit indices used were under the given threshold for the BoS measurement instrument, work engagement, and the SEM model for relationship analysis (Table 3). The relationship between the BoS and work engagement was significant (Table 4).

### Findings

The SEM results support H1: the BoS were significantly and positively associated with work engagement ( $\beta = 0.591$ ,  $R^2 = 0.35$ ,  $p < 0.001$ ) (Figure 3), indicating that 35% of the variance

**Table 3.** Representation of the summary of model fit indices

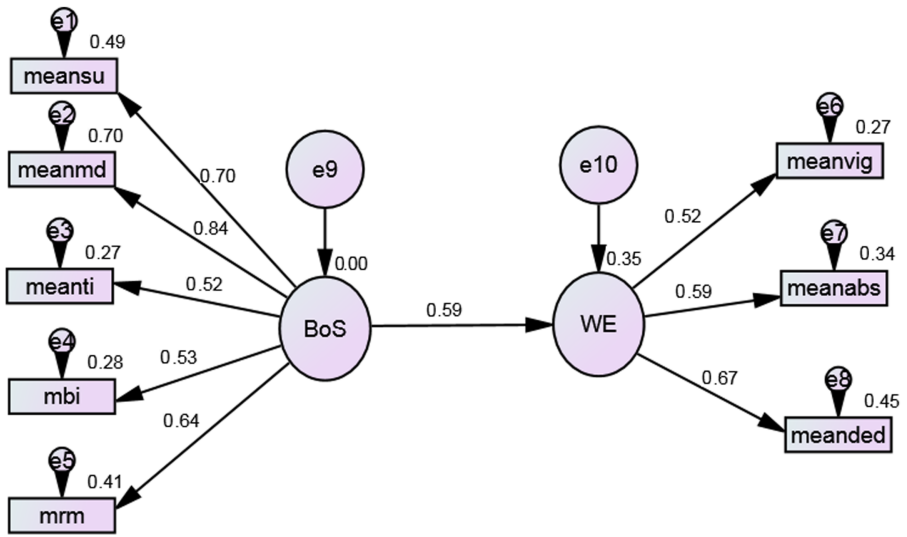
| CMIN   | CMIN/DF | GFI   | AGFI  | RMSEA | CFI   |
|--------|---------|-------|-------|-------|-------|
| 34.534 | 1.818   | 0.974 | 0.951 | 0.049 | 0.902 |

**Note(s):** The values depicted a good model fit at a significance level \*\*\* $p < 0.001$   
**Source(s):** Computed by author

**Table 4.** Representation of estimates obtained after SEM analysis

| Parameter              | Un-standardised estimate | Standardised estimate | Standard error | C.R   | p-value | Hypothesis |
|------------------------|--------------------------|-----------------------|----------------|-------|---------|------------|
| WE ← Benefits of CHCDS | 0.411                    | 0.591                 | 0.078          | 5.259 | ***     | Supported  |
| SU ← Benefits of CHCDS | 0.899                    | 0.698                 | 0.112          | 8.012 | ***     |            |
| MD ← Benefits of CHCDS | 1.161                    | 0.838                 | 0.134          | 8.675 | ***     |            |
| TI ← Benefits of CHCDS | 0.584                    | 0.523                 | 0.086          | 6.789 | ***     |            |
| BI ← Benefits of CHCDS | 1.000                    | 0.534                 |                |       |         |            |
| RM ← Benefits of CHCDS | 1.097                    | 0.639                 | 0.129          | 8.526 | ***     |            |
| VIG ← WE               | 1.000                    | 0.520                 |                |       |         |            |
| ABS ← WE               | 0.722                    | 0.587                 | 0.118          | 6.098 | ***     |            |
| DED ← WE               | 0.920                    | 0.672                 | 0.145          | 6.358 | ***     |            |

**Note(s):** The values depicted a good model fit at a significance level \*\*\* $p < 0.001$   
**Source(s):** Computed by author



**Figure 3.** Results of SEM depicting the benefits of CHCDS significantly related to work engagement. Source: Computed by author

in work engagement scores was shared with the CHCDS benefits construct (Table 4). This cross-sectional finding represents an association rather than a causal effect; the directionality cannot be established without longitudinal or experimental designs. Among the five CHCDS benefit dimensions, market development ( $\beta = 0.838$ ) and skill upgradation ( $\beta = 0.698$ ) showed the strongest associations, followed by raw material support ( $\beta = 0.639$ ), basic infrastructure ( $\beta = 0.534$ ) and technical infrastructure ( $\beta = 0.523$ ). Among the work engagement dimensions, dedication ( $\beta = 0.672$ ) and absorption ( $\beta = 0.587$ ) were more strongly associated with scheme benefits than vigour ( $\beta = 0.520$ ), suggesting that scheme resources are particularly linked to weavers’ sense of meaning, pride and immersive task focus. These findings are consistent with JD-R logic and extend the work of Ngai *et al.* (2016) and Jha *et al.* (2019), demonstrating that resource-provision programmes are associated with higher engagement in craft-based, unorganised settings as well as formal sectors.

*Common method variance test*

Since only one instrument was used for data collection, Harman’s single-factor test was used to determine the possibility of common technique bias (Podsakoff *et al.*, 2003). Since no rotation was done and exploratory factor analysis was used to conduct the test, all of the components were loaded into a single factor. According to Podsakoff *et al.* (2003), this one factor accounted for 35.61% of the variance, which was less than 50% and disapproved of the possibility of common technique bias. Along with this, several procedural remedies were implemented. Respondents were assured of anonymity and confidentiality and were informed that there were no right or wrong answers. Additionally, predictor and criterion variables were presented in separate sections of the questionnaire to minimise respondents’ ability to infer relationships among constructs.

**Discussion**

This study examined the cross-sectional association between the benefits of the CHCDS and work engagement among handloom weavers in Varanasi. The significant positive association

observed ( $\beta = 0.591, R^2 = 0.35, p < 0.001$ ) is consistent with the JD-R model's prediction that resource availability activates the motivational pathway sustaining engagement (Bakker *et al.*, 2014). The stronger associations for market development and skill upgradation – compared to infrastructure and raw material support – suggest that higher-order developmental resources may be more potent engagement drivers in this context, consistent with self-determination theory's emphasis on competence and autonomy as core psychological needs (Ryan and Deci, 2000). The finding that dedication and absorption showed greater sensitivity to scheme benefits than vigour further supports this interpretation: skill acquisition and market awareness activate weavers' sense of meaning, pride and immersive task focus. Research consistently shows that higher work engagement is associated with stronger performance (Gruman and Saks, 2011) and lower turnover intention (Christian *et al.*, 2011; Saks, 2006), outcomes of direct relevance to the handloom sector's retention challenge. Grounded in the multidimensional approach (Saks, 2006), this study's focus on work – rather than organisational – engagement is theoretically appropriate for an artisanal, unorganised setting.

The association between scheme benefits and work engagement also carries implications for work-related well-being more broadly. In the labour economics literature, work-related well-being has emerged as a meaningful predictor of labour mobility and absenteeism (Green, 2010; Soh *et al.*, 2016; Hardy *et al.*, 2003), outcomes of pressing concern in the handloom sector. Work engagement, as a positive indicator of psychological investment in one's craft, represents a more nuanced well-being measure than job satisfaction alone (Crede *et al.*, 2007; Fisher, 2010). The present study demonstrates that CHCDS benefit dimensions are meaningfully associated with this indicator, providing policymakers with evidence-based rationale for sustaining resource-provision programmes. While causality cannot be inferred from this cross-sectional design, the consistency of findings with JD-R theory and comparable empirical studies lends them substantive interpretive weight.

## Implications

### *Theoretical implication*

This study makes a contextual theoretical contribution by extending Saks (2006) multidimensional approach and the JD-R model (Demerouti *et al.*, 2001; Bakker *et al.*, 2014) to an unorganised, artisanal sector largely absent from the engagement literature. The finding that externally provided, scheme-based resources are significantly associated with work engagement advances the conceptualisation of job resources to include policy-delivered supports – a dimension not typically examined in JD-R applications to formal industries. The study validates the UWES-9 in a new context and contributes a sector-specific measurement tool (the BoS scale) adoptable by future researchers in comparable artisanal settings. In labour economics, the findings provide empirical grounding for using engagement as a psychologically sensitive indicator of scheme effectiveness and labour retention (Green, 2010).

### *Policymakers*

The findings carry specific and actionable implications for the design and implementation of the CHCDS and comparable welfare schemes. Market development and skill upgradation emerged as the benefit dimensions most strongly associated with engagement. Policymakers can prioritise and strengthen these components in the CHCDS. Technical infrastructure and raw material support should be treated as threshold conditions: without reliable loom maintenance and consistent yarn supply, motivational gains from skill and market investments are likely to be undermined (Bhattacharya and Sen, 2019). Longitudinal tracking (pre-enrolment, one-year post-enrolment and three-year post-enrolment) would enable assessment of whether specific benefit dimensions produce durable engagement effects and early identification of at-risk weavers.

Dawar and Singh (2023) emphasise that stakeholder co-design – involving weavers, nongovernmental organisations and government officials in jointly reviewing scheme benefit categories – can improve both uptake and sustained engagement. Incorporating weavers' perspectives in scheme revision would align programme design more closely with actual resource needs. The associational framework applied in this study provides a methodological template that could be extended to examine the relationship between scheme benefits and other work-related outcomes for, e.g. occupational commitment across artisanal and informal sector contexts.

*South Asian Context:* A similar study can be replicated in other South Asian countries, too, where the artisans are facing similar work-centric issues. In Malaysia, with odd working conditions, lack of adequate production facilities, lack of skills, irregular raw material supply and lack of training programs are some of the challenges that Songket weavers deal with (Ilyas *et al.*, 2018). These are quite similar to the problems faced in the Indian handloom sector. The condition is the same in the Bangladesh and Sri Lankan handloom sectors too. The government and institutional bodies have a strong opinion to help and promote this sector in order to preserve this art and skill. To reduce labour mobility and increase interest among the youth to take up handloom weaving as a job, the governments of these countries have implemented various schemes and intervention programs. Yayasan Tuanku Nur Zahirah, a foundation in Malaysia under the royal patronage of Malaysia (Kheng and Ngo, 2010); National Handloom Development corporation in India; Bangladesh Handloom Board in Bangladesh (Rahman, 2013); Export-led Poverty Reduction Programme designed by ITC, working for better livelihood and better working conditions for weavers in Cambodia; Department of Textile Industries-DTI and EDB-Export Development Board in Sri Lanka are such organisations that are working dedicatedly for the handloom sectors and their sustenance. Similarities in difficulties faced and their contribution to the growth of the country, institutional support and production process are important considerations that are indicative of the usefulness of the study.

### Limitations

There has been use of the self-reported method; therefore, there can be chances of a social desirability effect. The research was limited to the Varanasi region, and other geographical locations were untouched. Therefore, the inferences were drawn from weavers from Varanasi only. In the present study, the weaver's perspective was only covered; the views of the policymakers were not considered. Official opinions were taken into account, but only up until the scale for calculating the scheme's benefits was developed. The study lacked the representation of both the stakeholders, i.e. weavers and policymakers.

### Conclusion

This study provides empirical evidence of a significant positive association between the perceived benefits of the CHCDS and work engagement among handloom weavers in Varanasi ( $\beta = 0.591$ ,  $R^2 = 0.35$ ,  $p < 0.001$ ). Grounded in the JD-R model and Saks (2006) multidimensional approach, the findings demonstrate that externally provided, policy-delivered resources are meaningfully associated with vigour, dedication and absorption in an unorganised artisanal context. Market development and skill upgradation emerged as the benefit dimensions most strongly associated with engagement, with dedication and absorption showing greater sensitivity to these resources than vigour. It is essential to note that, given the cross-sectional design, these findings represent associations rather than causal or predictive relationships. Other individual, social, and contextual factors undoubtedly contribute to engagement, and longitudinal or experimental designs are necessary to establish directionality. The study makes a contextual contribution by extending engagement theory to an underrepresented sector, validating measurement tools in a new context and offering an evidence base for engagement-informed policy evaluation in the Indian handloom sector.

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Future research should replicate and extend these findings across other artisanal sectors in South and Southeast Asia, including female weavers and policymaker perspectives and employ longitudinal designs to examine the sustained impact of scheme participation on weaver well-being and craft retention.

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### Further reading

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