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4.15 Business Challenges Faced by Vendors

Challenges Reported: Lack of resources, Lack of support, Lack of time, Lack of knowledge, Other

Observation: Concerns about patient knowledge, resources, and support for health and environmental challenges.

4.2 Challenge Impact and Duration

Impact of Economic Challenges Reported by Basic Needs

Impact Level	Number of Respondents	Percentage (%)
Basic Needs Impact		
Food Security	242	32.2
Healthcare	240	31.9
Shelter	229	30.5
Clothing	39	5.2

Observation: Economic challenges impact food security, healthcare, and shelter, with lower impact on clothing.

4.3 Risk Perceptions

Perceived Risk Levels by Category

Risk Category	Low Risk	Medium Risk	High Risk	% High Risk
Medical Risk	1	3	746	99.3
Financial Risk	2	19	731	97.3
Social Risk	2	3	746	99.3
Emotional Risk	1	4	745	99.2
Physical Risk	1	3	746	99.3
Overall Risk	1	3	746	99.3

Risk Levels: Business Risk, Life Risk, Health Risk, Health Issues (24%), weather damage (20.8%), crime/violence (21.9%), Economic Risk, Financial Risk, Social Risk, Emotional Risk, Physical Risk

Observation: Business and Health risks are primary concerns, with harassment and discrimination also prevalent but with notable variation.

5 Business Location

5.1 Fixed vs Mobile Vending Patterns

Pattern: 57.3% (431) are fixed locations, Engineers in the Field, based in other areas.

Observation: Fixed vending is common, likely tied to market access, but mobile vending persists in less structured areas.

5.2 Income Source

Observation: Vending is the primary income source for most, with limited secondary sources (31.1%-34.7%), increasing financial vulnerability.

5.3 Work Location and Living Conditions

Observation: Poor living conditions (e.g., 11.2% Poor with Friends/Relatives, 6.4% Poor) contrast with better conditions with lower frequency.

6 Health and Well-Being

6.1 Health Issues and Treatment

Frequency of Health Issues Reported

Frequency of Health Issues Reported

Health Issue	Count	Percentage (%)
Frequency of Health Issues Reported		
Malaria	242	40.0
Typhoid	240	39.7
High Blood pressure	78	12.9
Diarrhoea	45	7.4
Respiratory Problems	20	3.3
Diabetes	17	2.8

Frequency: Sometimes (42.7%), seldom (37.2%), always (15.1%), never (5.0%)

Common Issues: Malaria (40.0%), high blood pressure (12.9%), typhoid (39.7%)

Observation: Health issues are widespread and prevalent, reflecting environmental risks.

6.2 Healthcare Access and Insurance

Insurance: 75.0% have health insurance

Healthcare Access: 99.3% have access to healthcare (99.3%), no treatment (0.7%)

Observation: High insurance coverage, but reliance on pharmacies suggests access barriers to formal healthcare.

6.3 Well-being Indicators

Frequency of Maintaining Indicators Reported

Indicator	Always	Sometimes	Seldom	Never
Maintaining Indicators				
Access to Clinic	15	42.3	37.2	5.0
Medical Consultation	15	42.3	37.2	5.0
Food Consumption	15	42.3	37.2	5.0
Wellness Activities	15	42.3	37.2	5.0
Water Quality Issues	15	42.3	37.2	5.0
Crime/Violence Issues	15	42.3	37.2	5.0

Health Issues by Age Group Reported by Vendor

Health Issue	Count	Percentage (%)
Health Issues by Age Group		
Malaria	242	40.0
Typhoid	240	39.7
High Blood pressure	78	12.9
Diarrhoea	45	7.4
Respiratory Problems	20	3.3
Diabetes	17	2.8

Frequency: Sometimes (42.7%), seldom (37.2%), always (15.1%), never (5.0%)

Common Issues: Malaria (40.0%), high blood pressure (12.9%), typhoid (39.7%)

Observation: Health issues are widespread and prevalent, reflecting environmental risks.

6.4 Health Issues by Demographics

Frequency of Health Issues by Income Category

Age Group	Health Issues Frequency	Count	Percentage (%)
Frequency of Health Issues by Age Group			
18-24	Sometimes	78	32.2
18-24	Always	36	14.9
18-24	Never	34	14.0
18-24	Seldom	94	38.8
25-34	Sometimes	226	42.2
25-34	Never	78	14.6
25-34	Always	81	15.1
25-34	Seldom	150	28.0
35-44	Sometimes	78	40.6
35-44	Never	15	7.8
35-44	Always	36	18.8
35-44	Seldom	63	32.8
45-54	Never	15	7.8
45-54	Always	36	18.8
45-54	Seldom	63	32.8
55+	Sometimes	78	40.6
55+	Never	15	7.8
55+	Always	36	18.8
55+	Seldom	63	32.8

Frequency of Health Issues by Income Category

Income Category	Health Issues	Count	Percentage (%)
Health Issues by Income Category			
Low (<500)	Seldom	226	42.2
Low (<500)	Sometimes	78	14.6
Low (<500)	Always	81	15.1
Low (<500)	Never	150	28.0
Medium Low (500-1000)	Sometimes	226	42.2
Medium Low (500-1000)	Never	78	14.6
Medium Low (500-1000)	Always	81	15.1
Medium Low (500-1000)	Seldom	150	28.0
Medium High (1001-1500)	Sometimes	226	42.2
Medium High (1001-1500)	Never	78	14.6
Medium High (1001-1500)	Always	81	15.1
Medium High (1001-1500)	Seldom	150	28.0
High (>1500)	Sometimes	226	42.2
High (>1500)	Never	78	14.6
High (>1500)	Always	81	15.1
High (>1500)	Seldom	150	28.0

By Age: Older vendors (55+) experience more health issues (Sometimes 40.6%, Always 18.8%)

By Income: Low income vendors (<500) MAY report higher health issues (Frequency 23.2% always)

Observation: Older and poorer vendors face greater health burdens.

6.5 Health and Work Relationship

Observation: Work-related health issues (24.9% Sometimes) are a key concern, with poor environmental conditions, reducing productivity.

7 Health and Safety Conditions

7.1 Health Status and Access

Health Status and Healthcare Access Assessment

Category	Level	Count	Percentage (%)
Overall Access to Healthcare			
Overall Healthcare Access	Yes	746	100.0
Health Insurance Coverage	No	186	24.9
Health Status			
Overall Health Status	Good	746	100.0
Health Issues Frequency			
Health Issues Frequency	Sometimes	242	40.0
Health Issues Frequency	Never	240	39.7
Health Issues Frequency	Always	78	12.9
Health Issues Frequency	Seldom	45	7.4
Health Issues			
Most Reported Health Issue	Malaria	242	40.0
Most Reported Health Issue	Typhoid	240	39.7
Most Reported Health Issue	Malaria	78	12.9
Most Reported Health Issue	Typhoid	45	7.4
Most Reported Health Issue	Typhoid	20	3.3
Most Reported Health Issue	Respiratory Problems	17	2.8
Most Reported Health Issue	Malaria	15	2.5
Treatment Sources			
Treatment Sources	Pharmacy	240	39.7
Treatment Sources	Local Clinic	78	12.9
Treatment Sources	Self Medication	45	7.4
Treatment Sources	Traditional Healer	20	3.3

Summary: 75.0% insured, but 24.9% frequently lack health insurance, which amplifies access issues. 99.3% report good health status, but 40.0% experience malaria and 39.7% experience typhoid, indicating a significant health crisis. Pharmacies (39.7%) are the primary healthcare access point, suggesting limited formal healthcare access.

Observation: Insurance coverage is high, but frequent health issues indicate workplace hazards.

8 Social Networks and Support

8.1 Social Connections

Summary: Most frequent contact is with family members (Daily: 746, Weekly: 746, Monthly: 746, Rarely: 746, Never: 746).

Observation: Strong family ties and large social networks provide critical support.

8.2 Support Received and Needed

Source: Support Needs Survey (Metal Workers), n = 56

Source: Support Needs Survey (Metal Workers), n = 56

Support Received

Support Type	Count	Percentage (%)
Financial	34	60.7
Equipment	28	50.0
Marketing	24	42.9
Credit	21	37.5
Childcare	18	32.1
Production	15	26.8
Other	12	21.4

Source: Support Needs Survey (Metal Workers), n = 56

Preferred Support

Support Type	Count	Percentage (%)
Financial	48	85.7
Equipment	41	73.2
Training	39	69.6
Marketing	36	64.3
Credit	34	60.7
Grants	31	55.4
Production	28	50.0
Childcare	24	42.9

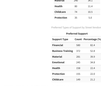
Source: Support Needs Survey (Metal Workers), n = 56

Received: Financial (60.7%), equipment (50.0%), marketing (42.9%)

Preferred: Financial (85.7%), equipment (73.2%), training (69.6%), marketing (64.3%), credit (60.7%), grants (55.4%), production (50.0%), childcare (42.9%)

Observation: Significant gap exists, especially for grants (55.7% wanted, only 31% received), and childcare (42.9% gap).

8.3 Social Capital and Trust



Source: Survey Questions 12 (Friday), 13 (Sunday), 14 (Other Vendors), 15 (Neighbor Assistance), n = 56

Social Capital and Trust Summary

Indicator	Mean	Median	SD	Min	Max
Trust Neighbors (Friday)	3.8	4	0.9	2	5
Trust Neighbors (Sunday)	3.7	4	1.0	2	5
Trust Other Vendors	3.5	4	1.0	2	5
Neighbor Assistance	3.6	4	1.0	2	5
Low Scores	1.8	2	0.8	1	3
Group Average	3.6	3.8	0.7	2.5	5

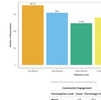
Source: Family Support (Lab), Social Capital (Lab), n = 56

Trust: Neighbors (3.8), Neighbors (3.7), Vendors (3.5)

Assistance: Neighbor support is strong, but low other vendor scores. Vendor networking potential

8.4 Community Engagement Levels

Source: Community Engagement Survey, n = 56



Source: Workplace Survey, n = 56

Community Engagement

Participation Level	Count	Percentage (%)
Never	178	38.1
Sometimes	142	30.4
Sometimes	97	20.8
Often	50	10.7
Always	20	4.3

Source: Community Engagement, n = 56

Workplace Influence

Influence Level	Count	Percentage (%)
No Influence	187	33.4
Little Influence	155	27.7
Some Influence	124	22.1
Considerable Influence	104	18.6
Strong Influence	187	33.4

Source: Workplace Survey, n = 56

Participation: 30.4% never engage, 20.8% sometimes, 10.7% often, 4.3% always

Workplace Influence: 33.4% no influence, 22.1% little influence, 18.6% considerable influence, 33.3% strong influence.

Observation: Limited community engagement suggests weak collective action.

8.5 Social Support Networks

Source: Survey Question 16 (Friday Support Sources), n = 56

Social Support Networks

Support Source	Count	Percentage (%)
Family	186	33.2
Friends	142	25.4
Church	98	17.5
Religious groups	45	8.0
Community groups	37	6.6
Local government	2	0.3
Other	1	0.2

Source: Survey Question 16, n = 56

Sources: Family (33.2%), friends (25.4%), church (17.5%), friends (25.4%). Observation: Family is the primary support source, with minimal reliance on NGOs or government.

9 Social Capital and Support Systems

9.1 Social Capital Analysis

Source: Survey Questions 12-15, Social Capital Indicators, n = 56

Social Capital Components Mean Scores

Component	Mean Score
Friend Support	4.2
Trust Neighbors (Friday)	3.8
Social Net Thickness	3.65
Trust Neighbors (Sunday)	3.7
Trust Other Vendors	3.5
Neighbor Assistance	3.6
Community Low Scores	1.8
Group Participation	3.6

Source: Survey Questions 12-15, Social Capital Indicators, n = 56

Social Capital Components Ranking (Top to Bottom)

Support Type	Count	Percentage (%)
Financial	48	85.7
Equipment	41	73.2
Training	39	69.6
Marketing	36	64.3
Credit	34	60.7
Grants	31	55.4
Production	28	50.0
Childcare	24	42.9

Source: Survey Questions 12-15, Social Capital Indicators, n = 56

Social Network Size (Daily Contacts)

Category	Count	Mean Contacts
Large Network (10+ contacts)	34	12.4
Medium Network (5-9 contacts)	18	7.2

Source: Survey Question 4 (Daily Contacts), n = 56

Components: Family support (33.2%), neighbor trust (12.5%), social net (9.6%), vendor trust (12.6%). Observation: Social capital is strong, driven by family and neighbor trust.

9.2 Support Network Effectiveness

Source: Survey Questions 17-18, Support Network Effectiveness, n = 56

Source: Survey Questions 19-20, Support Network Effectiveness, n = 56

Summary of Support Effectiveness

Category	Level	Count	Percentage (%)
Family Assisted Frequency			
Family Assisted Frequency	Daily	186	33.2
Family Assisted Frequency	Weekly	142	25.4
Family Assisted Frequency	Monthly	98	17.5
Family Assisted Frequency	Rarely	45	8.0
Family Assisted Frequency	Never	37	6.6
Social Capital Score			
Social Capital Score	Friends	186	33.2
Social Capital Score	Family	142	25.4
Social Capital Score	Church	98	17.5
Social Capital Score	Neighbors	45	8.0
Social Capital Score	Community Leaders	37	6.6
Social Capital Score	Local Government	2	0.3
Social Capital Score	Other	1	0.2
Support Effectiveness			
Support Effectiveness	Yes	186	33.2
Support Effectiveness	Sometimes Helpful	142	25.4
Support Effectiveness	Neutral	98	17.5
Support Effectiveness	Not Helpful	45	8.0
Support Effectiveness	Rarely Helpful	37	6.6
Support Effectiveness	Not Very Helpful	2	0.3

Source: Survey Questions 17-20, Support Network Effectiveness, n = 56

Most Frequent Assistance: Daily (33.2%), weekly (25.4%), monthly (17.5%)

Most Helpful Support Source: Friends and family (33.2%), church (17.5%), neighbors (8.0%)

Effectiveness: Family is 33.2% and high. Religious groups (8.0%), Rarely (6.6%). Observation: Family and religious groups are highly effective in supporting vendors.

10 Social capital network analysis

Source: Survey Question 4 (Daily Contacts), n = 56

Source: Survey Questions 12-15, Social Capital Indicators, n = 56

Observation: Large networks (10+) show higher social capital across all dimensions, with the largest difference in community low scores (1.8 vs 1.5). Small networks (1-4) show lowest social capital, suggesting isolation effect.

11 Social capital and income relationship

Source: Survey Question 4 (Daily Income), Social Capital Indicators, n = 56

Income Statistics

Category	Level	Count	Mean Social Capital Score	Mean Daily Income (KES)
Income Level	Low Income	186	2.45	150
Income Level	Medium Income	142	3.12	350
Income Level	High Income	98	3.68	650
Income Level	Very High Income	45	4.20	1,200
Income Level	Very High Income	37	4.35	1,500

Source: Survey Question 4 (Daily Income), n = 56

Findings: High income (650 KES) correlates with higher social capital (3.68 vs 2.45). Low income (150 KES) shows lowest social capital (2.45). Very high income (1,500 KES) shows highest social capital (4.35).

Observation: Social capital buffers economic challenges, but no impact observed at high vulnerability levels.

12 Support network effectiveness

Source: Survey Questions 17-18, Support Network Effectiveness, n = 56

Support Effectiveness Summary

Category	Level	Count	Percentage (%)
Support Effectiveness	Family Very Helpful	186	33.2
Support Effectiveness	Family Very Helpful	142	25.4
Support Effectiveness	Family Very Helpful	98	17.5
Support Effectiveness	Neighbors Very Helpful	45	8.0
Support Effectiveness	Community Leaders Very Helpful	37	6.6
Support Effectiveness	Other Very Helpful	2	0.3

Effectiveness: Family (33.2%), friends (25.4%), church (17.5%), neighbors (8.0%), community leaders (6.6%), other (0.3%).

Observation: Family and friends are highly effective, with minimal reliance on government or community leaders.

13 Safety and Environmental Conditions

13.1 Safety Perceptions

Source: Survey Question 21, n = 56

Source: Survey Question 22, n = 56

Sleeping Locations

Sleeping Location	Count	Percentage (%)
Shelter	186	33.2
Stores/Kiosks/Houses	142	25.4
With friends or relatives	98	17.5
Other vendors	45	8.0
Friends	37	6.6
Unoccupied buildings	2	0.3
Street	1	0.2

Sleeping Locations: Rented (33.2%), owned houses (25.4%), with friends/relatives (17.5%), market stores (1.3%).

Observation: Most have stable housing, but a minority face precarious conditions (e.g., sleeping outside).

13.2 Environmental Conditions

Source: Survey Questions 23-28, Environmental Conditions, n = 56

Environmental Conditions Summary

Indicator	Poor	Fair	Good	Excellent	Mean Score	Median Score	Mode Score	% Good or Better
Overall Safety	186	142	98	45	2.8	3	3	80.4
Dust Exposure	186	142	98	45	2.8	3	3	80.4
Noise Levels	186	142	98	45	2.8	3	3	80.4
Ventilation	186	142	98	45	2.8	3	3	80.4
Lighting	186	142	98	45	2.8	3	3	80.4
Safety Equipment	186	142	98	45	2.8	3	3	80.4

Ratings: Poor (33.2%), Fair (25.4%), Good (17.5%), Excellent (8.0%), all quality (6.6%), Mode (0.3%).

Observation: Conditions are uniformly poor, with significant exposure risks.

14 Accessibility and Transportation

14.1 Service Accessibility

Service Type	Median Accessibility	Interquartile Range (IQR)
Education	1	2
Financial Services	1	2
Recreation	1	2
Healthcare	1	2
Banking/Shopping	1	2
Public Transport	1	2

Scores, healthcare and banking (median 1.0), education and financial services (median 1.5). Observations: Access to essential services is limited, particularly in Wilfred and Old Valley.

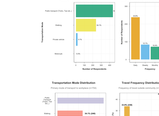
14.2 Transportation Patterns

Distribution of Primary Transportation Modes Among Respondents

Transportation Mode	Count	Percentage (%)
Walking / Cycling	287	28.7
Matatu	271	27.1
Private vehicle	151	15.1
Motorcycle	142	14.2
Boda-boda	149	14.9

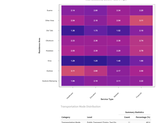
Total Respondents: 1000

Travel Frequency - Count	Percentage (%)
Daily	218	21.8
Weekly	381	38.1
Monthly	311	31.1
Yearly	90	9.0



Modes: Public transport (50.2%), walking (28.7%). Travel Frequency: Weekly (38%), daily (21.8%). Observations: Public transport dominates, but frequently walking indicates cost or proximity barriers.

14.3 Commute Time patterns and spatial accessibility



Transportation Mode Distribution

Category	Count	Percentage (%)
Walking / Cycling	287	28.7
Matatu	271	27.1
Private vehicle	151	15.1
Motorcycle	142	14.2
Boda-boda	149	14.9

Total Respondents: 1000

Daily Commute by Commute Time

Category	Count	Mean Daily Income (USD)
Walk/Cycle (0-15 min)	218	2.40
Matatu (16-30 min)	271	2.80
Matatu (31-45 min)	151	3.20
Matatu (46-60 min)	142	3.60
Matatu (61-90 min)	149	4.00

Daily Income by Commute Time

Category	Count	Percentage (%)
Commute Time	1000	100.0
Daily Income	1000	100.0

Travel Frequency Distribution

Category	Count	Percentage (%)
Travel Frequency - Daily	218	21.8
Travel Frequency - Weekly	381	38.1
Travel Frequency - Monthly	311	31.1
Travel Frequency - Yearly	90	9.0

Service Accessibility by Residence Area

Category	Count	Mean Accessibility Score
Service Accessibility - Healthcare (Kibera)	1	2.4
Service Accessibility - Healthcare (Kariobangi)	1	2.8
Service Accessibility - Healthcare (Mathare North)	1	2.7
Service Accessibility - Healthcare (Korogocho)	1	2.1
Service Accessibility - Healthcare (Dandora)	1	3.0
Service Accessibility - Healthcare (Kawangware)	1	2.6
Service Accessibility - Healthcare (Mukuru)	1	2.2
Service Accessibility - Healthcare (Eastleigh)	1	3.4
Service Accessibility - Healthcare (Kangemi)	1	2.9
Service Accessibility - Education (Kibera)	1	2.6
Service Accessibility - Education (Kariobangi)	1	3.0
Service Accessibility - Education (Mathare North)	1	2.9
Service Accessibility - Education (Korogocho)	1	2.3
Service Accessibility - Education (Dandora)	1	3.2
Service Accessibility - Education (Kawangware)	1	2.8
Service Accessibility - Education (Mukuru)	1	2.4
Service Accessibility - Education (Eastleigh)	1	3.6
Service Accessibility - Education (Kangemi)	1	3.1
Service Accessibility - Financial Services (Kibera)	1	2.4
Service Accessibility - Financial Services (Kariobangi)	1	2.8
Service Accessibility - Financial Services (Mathare North)	1	2.7
Service Accessibility - Financial Services (Korogocho)	1	2.1
Service Accessibility - Financial Services (Dandora)	1	3.0
Service Accessibility - Financial Services (Kawangware)	1	2.6
Service Accessibility - Financial Services (Mukuru)	1	2.2
Service Accessibility - Financial Services (Eastleigh)	1	3.4
Service Accessibility - Financial Services (Kangemi)	1	2.9

Commute Time: 1-hour (41.4%), 30-min (28.7%), 45-min (15.1%), 60-min (14.9%).

Income by Commute: 45-min commuters earn highest (mean 3.20 USD), 30-min commuters lowest (2.80 USD).

Observations: Residents commute outside their ward for better earnings, suggesting limited market access.

15 Area-wise Comprehensive Analysis

Cross-dimensional comparison across all 8 study areas

Location	Income Score	Accessibility Score	Social Mobility Score	Social Cohesion Score	Quality of Life Score	Crime Safety Score	Environmental Quality Score	Composite Score
Kangemi	3.6	3.3	3.4	3.5	3.4	3.3	3.2	3.4
Mathare North	3.4	3.1	3.2	3.4	3.3	3.2	3.1	3.3
Kariobangi	3.2	3.0	3.0	3.2	3.1	3.0	3.0	3.1
Eastleigh	3.1	2.9	2.9	3.1	3.0	2.9	2.9	3.0
Dandora	2.9	2.8	2.8	3.0	2.9	2.8	2.8	2.9
Kibera	2.8	2.7	2.7	2.9	2.8	2.7	2.7	2.8
Mukuru	2.7	2.6	2.6	2.8	2.7	2.6	2.6	2.7
Korogocho	2.6	2.5	2.5	2.7	2.6	2.5	2.5	2.6

Key Findings

Kangemi (3.4 composite), Mathare North (3.3), Kariobangi (3.1). Top performers: Kangemi (3.6), Mathare North (3.4), Kariobangi (3.2). Lowest overall: Korogocho (2.6), Mukuru (2.7), Kibera (2.8). Lowest income: Korogocho (2.6), Mukuru (2.7). Lowest accessibility: Korogocho (2.5), Mukuru (2.6). Lowest social mobility: Korogocho (2.5), Mukuru (2.6). Lowest social cohesion: Korogocho (2.7), Mukuru (2.8). Highest crime safety: Kangemi (3.3), Mathare North (3.2). Highest environmental quality: Kangemi (3.2), Mathare North (3.1).

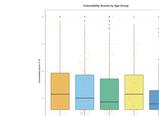
Observations: Kangemi leads across most dimensions, Korogocho and Mukuru consistently rank last. Patterns suggest systemic disadvantage in Korogocho and Mukuru, while Kangemi and Mathare North show relative resilience.

16 Vulnerability and Discrimination

16.1 Vulnerability Assessment

Vulnerability Score Distribution

Computed scale from binary vulnerability indicators

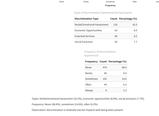


Vulnerability Level Distribution

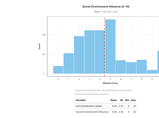
Categorical breakdown of vulnerability scores

Vulnerability Indicators

Average scores for each vulnerability dimension



Vulnerability Score by Age Group



Kruskal-Wallis H = 12.4, p = 0.015

Level	Count	Percentage (%)
Low	341	34.1
Medium	318	31.8
High	341	34.1
Very High	60	6.0

Mean Scores of Vulnerability Indicators

Component	Mean Score (1–5)
Income Vulnerability	3.8
Income Instability (σ)	2.84
Financial Exclusion	2.87
Housing Insecurity	1.76
Healthcare Access	2.71
Harassment Risk	1.71
Housing Instability	2.66

Mode: Income Vulnerability (3.8), Lowest: Housing Insecurity (1.76). Income instability (σ = 2.84) and financial exclusion (2.87) indicate systemic vulnerability.

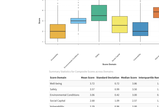
Patterns: Low-income (Q1), moderate-income (Q2/Q3), high (Q4), very high (6.0%).

Observations: Income instability and financial exclusion are primary vulnerabilities. Housing security is relatively stable. Vulnerability increases with age, peaking at 55+. Elderly residents face compounded vulnerabilities.

16.2 Discrimination Experiences

Types of Discrimination Experienced

Frequency of Discrimination Experienced



Most Common Discrimination Experiences

Discrimination Type	Count	Percentage (%)
Gender/Sexual Orientation	231	23.1
Ethnicity/Tribe	187	18.7
Political Affiliation	95	9.5
Disability	58	5.8

Frequency of Discrimination

Frequency - Count	Percentage (%)
Never	472	47.2
Rarely	181	18.1
Sometimes	175	17.5
Often	91	9.1
Always	81	8.1

Types: Gender/sexual orientation (23.1%), ethnicity/tribe (18.7%), political affiliation (9.5%), disability (5.8%).

Frequency: Never (47.2%), sometimes (17.5%), often (9.1%), always (8.1%).

Observations: Discrimination is relatively low but frequent, with long-term patterns.

17 Life Satisfaction and Overall Well-being

17.1 Life Satisfaction

Life Satisfaction Ladder (0–10)

Mean = 4.03, SD = 2.07

Social Environment Influence (0–10)

Mean = 5.02, SD = 2.08

Summary Statistics for Life Satisfaction and Social Environment Influence

Variable	Mean	SD	Min	Max
Life Satisfaction Ladder	4.03	2.07	0	10
Social Environment Influence	5.02	2.08	0	10

Scale: Mean 4.03/10 (SD = 2.07). Observations: Moderate life satisfaction reflects economic and social challenges.

17.2 Composite Scores Analysis

Distribution of Composite Scores

Kernel density estimates for 8 domains (0–1 scale)

Summary Statistics for Composite Scores (0–1 scale)

Dyad Domain	Mean Score	Standard Deviation	Median Score	Interquartile Range
Income	0.42	0.18	0.40	0.25
Safety	0.52	0.20	0.50	0.28
Environmental Conditions	0.56	0.19	0.54	0.26
Social Capital	0.58	0.18	0.56	0.24
Sustainability	0.55	0.18	0.53	0.25
Quality of Life	0.54	0.17	0.52	0.23

Top Domains (Average Score): Sustainability (0.55), Quality of Life (0.54), Social Capital (0.58).

Bottom Domains (Average Score): Income (0.42), Safety (0.52), Environmental Conditions (0.56).

Observations: Income is the lowest-performing domain, while sustainability and quality of life show relatively better outcomes.

Scores: Well-being (3.72/5), safety (3.57/5), social capital (2.68/5), vulnerability (2.29/5). Observation: High well-being contrasts with moderate social capital and vulnerability.

17.3 Correlation Analysis

Table: Correlation Matrix of Key Variables

	Age	Daily Income	Work Hours	Job Satisfaction	Vulnerability	Well-being	Social Capital	Accessibility	Safety	Life Satisfaction	Soc Enviro
Age	1.00	0.29	0.18	0.21	-0.06	0.03	0.18	-0.08	0.02	0.25	0.:
Daily Income	0.29	1.00	0.28	0.30	-0.21	0.25	0.18	-0.16	-0.02	0.28	0.0
Work Hours	0.18	0.28	1.00	0.09	0.06	-0.08	-0.13	0.14	-0.15	0.07	-0.
Job Satisfaction	0.21	0.30	0.09	1.00	-0.31	0.17	0.54	-0.08	0.01	0.75	0.4
Vulnerability	-0.06	-0.21	0.06	-0.31	1.00	-0.59	-0.28	0.29	-0.19	-0.37	-0.
Well-being	0.03	0.25	-0.08	0.17	-0.59	1.00	0.28	-0.43	0.37	0.20	0.:
Social Capital	0.18	0.18	-0.13	0.54	-0.28	0.28	1.00	-0.30	0.15	0.55	0.4
Accessibility	-0.08	-0.18	0.14	-0.08	0.29	-0.43	-0.30	1.00	-0.33	-0.06	-0.

Key Correlations:Job satisfaction and life satisfaction (0.75). Social capital and life satisfaction (0.55). Vulnerability and well-being (-0.59).

Observation: Social capital and job satisfaction strongly drive life satisfaction, while vulnerability undermines well-being.

18 Beyound EDA Analysis

18.1 Principal Component Analysis

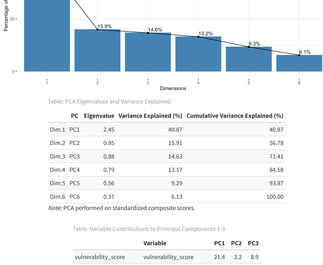


Table: PCA Eigenvalues and Variance Explained

	PC	Eigenvalue	Variance Explained (%)	Cumulative Variance Explained (%)
Dim.1	PC1	2.45	40.87	40.87
Dim.2	PC2	0.95	15.91	56.78
Dim.3	PC3	0.88	14.63	71.41
Dim.4	PC4	0.79	13.17	84.58
Dim.5	PC5	0.56	9.29	93.87
Dim.6	PC6	0.37	6.13	100.00

Note: PCA performed on standardized composite scores.

Table: Variable Contributions to Principal Components 1-3

	Variable	PC1	PC2	PC3
vulnerability_score	vulnerability_score	21.4	3.2	8.9
wellbeing_score	wellbeing_score	27.4	0.1	0.0
social_capital_score	social_capital_score	12.3	0.2	32.0
accessibility_score	accessibility_score	17.2	30.1	0.1
safety_score	safety_score	13.3	2.5	55.0
env_conditions_score	env_conditions_score	8.5	64.0	4.0

Note: Contributions indicate the importance of each variable to the PCs.

Variance Explained: PC1 (40.87%), PC2 (15.91%), PC3 (14.63%).

Key Contributors: Well-being (27.4% to PC1), vulnerability (21.4% to PC1), environmental conditions (64.0% to PC2).

Observation: Well-being and vulnerability are major drivers of variation.

18.2 Clustering Analysis

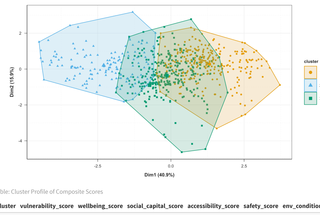


Table: Cluster Profile of Composite Scores

Cluster	vulnerability_score	wellbeing_score	social_capital_score	accessibility_score	safety_score	env_conditions_score
1	1.94	4.21	2.87	1.41	4.46	3.19
2	3.68	2.78	1.99	2.78	3.11	2.77
3	1.95	3.72	2.83	2.33	2.95	3.07

Note: Mean standardized composite scores per cluster.

Clusters:Cluster 1: Low vulnerability (1.94/5), high well-being (4.21/5).

Cluster 2: High vulnerability (3.68/5), low well-being (2.78/5).

Cluster 3: Moderate scores across domains.

Observation: Cluster 2 (high vulnerability) needs targeted support.

18.3 Challenge Clustering Analysis

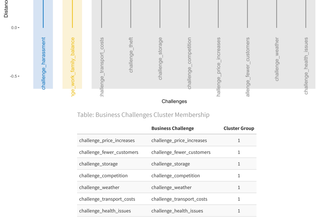


Table: Business Challenges Cluster Membership

	Business Challenge	Cluster Group
challenge_price_increases	challenge_price_increases	1
challenge_fewer_customers	challenge_fewer_customers	1
challenge_storage	challenge_storage	1
challenge_competition	challenge_competition	1
challenge_weather	challenge_weather	1
challenge_transport_costs	challenge_transport_costs	1
challenge_health_issues	challenge_health_issues	1
challenge_theft	challenge_theft	1
challenge_harassment	challenge_harassment	2
challenge_work_family_balance	challenge_work_family_balance	3

Clusters: Price increases, competition, and health issues cluster together; harassment and work-family balance are distinct.

Observation: Economic and health challenges are interconnected, requiring holistic interventions.

18.4 Vulnerability Profiling

Vulnerability Level Profiles of Street Vendors

		Demographics		Work	Well-being Scores		Resources	
vulnerability_level	N	Mean Age	Mean Income (GH¢)	Mean Work Hours	Mean Well-being	Mean Social Capital	Mean Life Satisfaction	% Health Insured	% Additional Income
Low	366	36.2	199	9.7	3.97	2.91	5.1	90.2	19.4
Moderate	201	35.0	193	9.6	3.83	2.60	3.8	75.1	25.9
High	92	35.9	182	10.3	3.21	2.38	3.8	69.6	13.0
Very High	45	34.3	74	10.3	2.37	1.80	2.3	31.1	8.9

Note: Values are means or percentages (for categorical variables) calculated by vulnerability level group.

Profiles:Low vulnerability: 199 GH¢, 90.2% insured, 5.1/10 life satisfaction. Very high vulnerability: 74 GH¢, 31.1% insured, 2.3/10 life satisfaction.

Observation: The most vulnerable (12.8%) face severe income and health access constraints.

Top Challenges Faced and Most Needed Support by Street Vendors

Business Challenges		Support Preferences	
Top Challenges	**% Affected**	**Most Needed Support**	**% Wanting**
Sudden price increases	55.0	Financial	82.4
Decrease in customers	30.8	Business Training	52.8
Too much competition	29.1	Material	39.9
Work-related health issues	29.1	Emotional	34.8
Weather-related issues	24.6	Health	22.4

19 Key policy recommendations

Financial Inclusion: Expand microfinance and business training (52.8% demand) to address income instability and financial exclusion.

Social Protection: Prioritize childcare (50.3% gap) and protection (77.4% gap) support, especially in Asokwa.

Health Interventions: Improve healthcare access and address work-related health issues (29.1%).

Area-Specific Actions: Target Asokwa for urgent interventions due to high vulnerability and low well-being.

Leverage Social Capital: Strengthen family and religious networks to enhance well-being and resilience.

20 Analysis Discussed

The WISER Project's exploratory data analysis of 704 female street vendors and hawkers in Ghana provides critical insights into how social capital supports well-being amidst economic challenges, while highlighting persistent vulnerabilities that demand targeted interventions. The findings reveal a workforce that is predominantly young (mean age: 35.7 years), moderately educated (34.2% senior high school, 31.8% JH.S/middle school), and heavily reliant on vending as a primary income source (mean: 187 GH¢ daily). Economic stressors, such as sudden price increases (55.0%) and competition (29.1%), combined with work-related health issues (29.1%) and environmental challenges like poor air quality (mean: 2.90/5) and noise (2.31/5), pose significant barriers to financial stability and well-being. These challenges are particularly acute in areas like Asokwa, where vulnerability is highest (mean: 3.46/5) and well-being lowest (2.84/5), contrasting with Ofoirkrom's lower vulnerability (1.73/5).Social capital emerges as a critical buffer, with a mean score of 2.68/5, driven by strong family support (3.24/5) and large social networks (47.3% with 6+ daily contacts). This is evident in the high well-being score (3.72/5, 83.4% high/very high) and moderate life satisfaction (4.42/10), which correlate strongly with social capital (r=0.55) and job satisfaction (r=0.75). However, significant gaps between received and preferred support—particularly for protection (77.4% gap) and childcare (50.3% gap)—indicate unmet needs that undermine resilience. The reliance on family (41.9%) and personal networks (32.4%) for support, coupled with low trust in other vendors (2.55/5), suggests limited cooperative potential among vendors, which could otherwise enhance economic outcomes.Health challenges, particularly malaria (43.9%), and work-related issues exacerbate vulnerabilities, especially among older (55+: 32.5% always report health issues) and low-income vendors ($100 GH¢: 13.1% always). While 79.4% have health insurance, reliance on pharmacies (42.3%) over health centers (40.5%) points to access barriers. Transportation patterns reveal that moderate commutes (35–60 minutes) are associated with higher earnings (205 GH¢), suggesting that access to better markets is a key determinant of income. Cluster analysis identifies four vendor groups, with the most vulnerable (12.8%) characterized by low income (74 GH¢), poor well-being (2.37/5), and low social capital (1.80/5), underscoring the need for urgent intervention.Geographic disparities highlight the necessity for area-specific policies, particularly in Asokwa, where low well-being and high vulnerability converge. The principal component analysis (PCA) confirms that well-being (27.4% contribution to PC1) and vulnerability (21.4%) are primary drivers of variation, while correlation analysis underscores the protective role of social capital against vulnerability (r=-0.28) and its enhancement of well-being (r=0.28). These findings align with prior research on informal economies, where social networks mitigate economic precarity but are insufficient without structural support (e.g., microfinance; training).The analysis suggests that policy interventions should prioritize financial inclusion through microfinance and business training (52.8% demand), alongside social protection measures addressing childcare and safety needs. Strengthening healthcare access and mitigating workplace hazards (e.g., air quality, noise) are also critical. By leveraging existing social capital, particularly family and religious networks (4.12/5 well-being impact), and fostering vendor cooperation, interventions can enhance resilience and well-being. Future research should explore longitudinal impacts of such interventions and investigate strategies to bridge trust gaps among vendors to foster collective economic strategies.

21 Conclusion

The WISER Project's exploratory data analysis underscores the critical interplay between social capital and well-being among female street vendors and hawkers in Ghana amidst economic challenges. The findings reveal a resilient yet vulnerable workforce, with a mean age of 35.7 years and a daily income of 187 GH¢, grappling with persistent economic stressors such as price increases (55.0%) and competition (29.1%). Social capital, characterized by strong family support (mean: 3.24/5) and extensive social networks (mean: 10.5 daily contacts), plays a pivotal role in buffering these challenges, contributing to a relatively high well-being score (3.72/5). However, significant gaps in support—particularly for protection (77.4%) and childcare (50.3%)—highlight unmet needs that undermine resilience. Geographic disparities, with Asokwa exhibiting the highest vulnerability (3.46/5) and lowest well-being (2.84/5), call for targeted interventions. Health challenges, notably malaria (43.9%), and work-related issues further exacerbate vulnerabilities, particularly among older and lower-income vendors. Cluster analysis identifies a critical 12.8% of vendors as highly vulnerable, necessitating urgent support. To enhance well-being, policy efforts should focus on expanding microfinance and business training (52.8% demand), improving healthcare access, and strengthening social protection systems, particularly in high-risk areas like Asokwa. By leveraging the robust social capital of family and religious networks, these interventions can empower female vendors to navigate economic challenges and improve their quality of life.