

Appendix C: Measurement Instruments

Part 1a Demographic Information

- Gender: Male or Female
- Age Group: Less than 30, 30 to 39, 40 and above
- Education Level: College graduate in TVET program. Bachelor, MSc/MA, Ph.D.
- Role in the Company: CEO, Manager, Team Leader, Other

Part 1b Control variable

- **Company Type:** Sole Proprietorship, General Partnership, Limited Partnership, Private Limited Company (PLC), Share Company, Cooperative, Other (please specify):
 - **Sector:** Agriculture & Agro-processing, Textile & Garment, Tourism & Hospitality, ICT (Software development, digital services, e-commerce, and other ICT-related ventures), Manufacturing, Construction & Real Estate, Retail & Trade, Services (Accounting, legal, marketing, training, consultancy), Transport & Logistics, Health & Pharmaceuticals, Energy & Mining, Leather & Leather Products,
 - **Number of Employees:** Microenterprise (1-10 employees), Small enterprise (11-50 employees), Medium enterprise (51-250 employees), Large enterprise (250+ employees)
- Market Cap:** Less than 20,000ETB, 20,000ETB - 500,000ETB, 500,000ETB = 1,000,000ETB, Greater than 1,000,000ETB (According to Ethiopian Legislation Act No 36/1998)

Part 2. Questionnaires

----- Constructs	Items (Likert Scale Questionnaires with 1 to 7 scale)	Reference
Customer Pressure	<ul style="list-style-type: none"> Our customers are well-informed about the circular economy. (1- Fully Uninformed/Unaware of — 7- Fully Informed/Aware of) 	Based on (Rodríguez-Espíndola et al., 2022)
	<ul style="list-style-type: none"> Our customers expect us to adopt more sustainable practices. (1- Do Not Expect at All – 7- Fully Expect) 	Based on (Rodríguez-Espíndola et al., 2022)
	<ul style="list-style-type: none"> Customers want us to follow specific green rules or standards.(1– Do Not Want at All — 7 –Fully Want) 	Based on (Rehman et al. (2022),
	<ul style="list-style-type: none"> Customers praise the use of circular economy practices.(1- Never Praise — 7- Always Praise) 	Based on (Rodríguez-Espíndola et al., 2022)
	<ul style="list-style-type: none"> Customers give feedback or comments about environmental and sustainable actions. (1- Never Receive Feedback — 7 - Always Receive Feedback) 	Based on (Rodríguez-Espíndola et al., 2022)
	<p>Please rate the following stakeholders considering their pressure on your company to Innovate a new business model to adopt LTAP and CEPI.</p> <p>[1 - Does not exert any pressure; 2 - Exerts very little pressure; 3 - Exerts little pressure; 4 - Exerts moderate pressure; 5 - Exerts some pressure; 6 - Exerts high pressure; 7 - Exerts a lot of pressure]</p> <p>Government (S1)</p>	Based on (Chiappetta Jabbour et al., 2020)

Constructs	Items (Likert Scale Questionnaires with 1 to 7 scale)	Reference
Government	Company owners/Shareholders (S2)	
	Employees (S3)	
	Civil Society /community (S4)	
	Media (S5)	
	Suppliers (S6)	
	• Stakeholders expect the alignment of internal company resources with government initiatives. (1- Strongly Disagree — 7 - Strongly Agree)	Based on (Rodríguez-Espíndola et al., 2022)
	• Stakeholders pressure to embrace government initiatives. (1- Strongly Disagree — 7 - Strongly Agree)	Based on (Rodríguez-Espíndola et al., 2022)
	• How much pressure do stakeholders put on your company when your company changes to a new business model? (1 - No Pressure — 7 - Very High Pressure)	Based on (Rodríguez-Espíndola et al., 2022)
	• Stakeholders pressure for regulatory changes within companies to adopt innovative business practices. (1- Strongly Disagree — 7 - Strongly Agree)	(Rodríguez-Espíndola et al., 2022)
	• Stakeholders have a strong influence on our decision-making process. (1- No Influence — 7 - Very High Influence)	(Rodríguez-Espíndola et al., 2022)
	• Government financial incentives support efforts to innovate business models. (1- No Support — 7 - Very Strong Support)	Based on (Rodríguez-Espíndola et al., 2022)

Constructs	Items (Likert Scale Questionnaires with 1 to 7 scale)	Reference
LTAT	<ul style="list-style-type: none"> The government-sponsored training and capacity-building programs enrich the skills of employees (e.g., management skills, engineering ability). (1- Not Enriched At All — - 7 - Greatly Enriched) 	Based on (Rodríguez-Espíndola et al., 2022)
	<ul style="list-style-type: none"> The current governmental regulations make it conducive for organizations to adopt innovative business strategies. (1- Strongly Disagree — - 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022)
	<ul style="list-style-type: none"> The government addresses waste accumulation and waste of resources through policies for recycling. (1- Strongly Disagree — - 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022)
	<ul style="list-style-type: none"> The government promotes policies on circular economy practices (CEP). (1 - Not promoted at All — - 7 - Strongly and Significantly promoted) 	Based on (Rodríguez-Espíndola et al., 2022)
	<ul style="list-style-type: none"> Our company's technology matches the local community's specific needs, conditions, and requirements. (1 - Do Not Match At All — - 7 - Perfectly Match) 	Based on (Rodríguez-Espíndola et al., 2022)
	<ul style="list-style-type: none"> Our company utilizes technology aligned with the culture and local economy. (1- Strongly Disagree — - 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022)
	<ul style="list-style-type: none"> The technology in our company contributes to the empowerment of the local community by addressing specific needs. (1- Strongly Disagree — - 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022)

Constructs	Items (Likert Scale Questionnaires with 1 to 7 scale)	Reference
CEPI	<ul style="list-style-type: none"> How well does your locally tailored technology fit the needs of the local community? (1 - Do Not Fit At All — 7 - Perfectly Fit) 	Based on (Rodríguez-Espíndola et al., 2022)
	<ul style="list-style-type: none"> In our company, we use technology to optimize resource utilization, e.g., avoid waste and minimize energy consumption. (1- Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022)Based on (Rodríguez-Espíndola et al., 2022)
	<ul style="list-style-type: none"> Our company utilizes digital platforms (IT-related technology) to use our adapted technology more efficiently. (1- Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022)
	<ul style="list-style-type: none"> Our company has implemented specific strategies to minimize waste and maximize the efficient use of resources in our operations. (1- Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022; Chiappetta Jabbour et al., 2020)
	<ul style="list-style-type: none"> Our company has incorporated definitive processes that ensure materials are recycled and reused in our production. (1- Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022; Chiappetta Jabbour et al., 2020)

Constructs	Items (Likert Scale Questionnaires with 1 to 7 scale)	Reference
BMI	<ul style="list-style-type: none"> Our company has established systems or services to repair and refurbish our products, extending their functional lifespan. (1- Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022; Chiappetta Jabbour et al., 2020)
	<ul style="list-style-type: none"> Our company has actively transitioned from using non-recyclable raw materials to incorporating renewable, recycled, recyclable, or biodegradable alternatives in our production. (1- Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022; Chiappetta Jabbour et al., 2020)
	<ul style="list-style-type: none"> Our company has protocols to source and integrate recycled materials as primary inputs in our production processes. (1- Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022; Chiappetta Jabbour et al., 2020)
	<ul style="list-style-type: none"> In our company, we constantly innovate our business model to support the environment better. (1–Never Innovate — 7 - Constantly Innovate) 	Based on (Rodríguez-Espíndola et al., 2022)
	<ul style="list-style-type: none"> Our company has integrated circular designs into our business model Innovation. (1 - Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022)
	<ul style="list-style-type: none"> We have incorporated a circular economy in our new business approach. (1 - Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022)

Constructs	Items (Likert Scale Questionnaires with 1 to 7 scale)	Reference
	<ul style="list-style-type: none"> Our business model includes novel strategies and structures for using locally tailored technology (1 - Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022)
	<ul style="list-style-type: none"> The structure of our business model innovation strongly emphasizes delivering value. (1 - Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022)
	<ul style="list-style-type: none"> Our company regularly engages in social initiatives and community development. (1 - Never Engage — 7 - Always Engage) 	Based on (Rodríguez-Espíndola et al., 2022)
	<ul style="list-style-type: none"> Stakeholders view our company as socially responsible. (1- Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022; Chiappetta Jabbour et al., 2020)
	<ul style="list-style-type: none"> Our company has positively impacted the local community and boosted customer satisfaction. (1- Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022; Chiappetta Jabbour et al., 2020)
Social Performance	<ul style="list-style-type: none"> Our business has led to job creation and community growth. (1- Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022; Chiappetta Jabbour et al., 2020)

Constructs	Items (Likert Scale Questionnaires with 1 to 7 scale)	Reference
Economic Performance	<ul style="list-style-type: none"> Our company's reputation and social standing have improved among stakeholders and the community. (1- Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022; Chiappetta Jabbour et al., 2020)
	<ul style="list-style-type: none"> Our company has seen consistent economic growth over the past years. (1- Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022; Chiappetta Jabbour et al., 2020)
	<ul style="list-style-type: none"> Our company could achieve cost savings in our operations. (1- Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022; Chiappetta Jabbour et al., 2020)
	<ul style="list-style-type: none"> Our company opened up new revenue streams and opportunities for our business. (1- Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022; Chiappetta Jabbour et al., 2020)
	<ul style="list-style-type: none"> In our company, our turnover has increased in recent years. (1- Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al.,

Constructs	Items (Likert Scale Questionnaires with 1 to 7 scale)	Reference
Environmental Performance		2022; Chiappetta
		Jabbour et al., 2020)
	<ul style="list-style-type: none"> Our company has significantly reduced its environmental footprint. (1- Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022; Chiappetta Jabbour et al., 2020)
	<ul style="list-style-type: none"> Our waste production has decreased, and our recycling rate has increased. (1 - No Improvement Observed — 7 - Tremendous Improvement) 	Based on (Rodríguez-Espíndola et al., 2022; Chiappetta Jabbour et al., 2020)
	<ul style="list-style-type: none"> Our company uses cleaner and greener business processes. (1- Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022; Chiappetta Jabbour et al., 2020)
	<ul style="list-style-type: none"> Our company has become more sustainable in resource consumption and waste management. (1- Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022; Chiappetta Jabbour et al., 2020)

Constructs	Items (Likert Scale Questionnaires with 1 to 7 scale)	Reference
Organizational performance	<ul style="list-style-type: none"> Our work processes have become simpler and more efficient. (1 - Highly Inefficient — 7 - Highly Efficient) 	Based on (Rodríguez-Espíndola et al., 2022; Chiappetta Jabbour et al., 2020)
	<ul style="list-style-type: none"> The structure of our company helps us to make decisions faster. (1- Strongly Disagree — 7 - Strongly Agree) 	Based on (Rodríguez-Espíndola et al., 2022; Chiappetta Jabbour et al., 2020)
	<ul style="list-style-type: none"> Considering your company's operational efficiency, employee happiness, growth, and adaptability, how would you rate the company's overall performance? (1 - Very Poor Performance — 7 - Excellent Performance) 	Based on (Rodríguez-Espíndola et al., 2022; Chiappetta Jabbour et al., 2020)
	<ul style="list-style-type: none"> Our team's collaboration and overall productivity have improved, resulting in a 20% reduction in project Completion time. (1- Strongly Disagree — 7 - Strongly Agree) 	Based on (Chiappetta Jabbour et al., 2020; Rehman et al.2022; Rodríguez-Espíndola et al., 2022)

