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Overcoming Risk Aversion Regarding Energy Efficiency Practices through Mimetic Pressure and Financial Slack: Findings from the Moroccan Manufacturing Sector

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Abstract: The Moroccan manufacturing sector consumes 24% of the country's total energy production. Morocco is dealing with energy challenges related to its growing energy consumption, which has made energy efficiency a national priority. In this study, we construct a model that includes mimetic pressure and financial slack as drivers to reduce the intensity of risk aversion regarding electrical energy efficiency practices within companies. Our research model was empirically examined using survey data gathered from 193 manufacturing companies located in four Moroccan regions. Results show that risk aversion is negatively related to energy efficiency practices. Both mimetic pressure and financial slack are positively related to energy efficiency practices. Both mimetic pressure and financial slack reduce risk aversion. Mimetic pressure dampens the negative relationship between risk aversion and energy efficiency practices, while financial slack does not dampen the negative relationship between risk aversion and energy efficiency practices. This study shows the importance of mimetic pressure in reducing risk aversion regarding energy efficiency practices. Therefore, policymakers should publicize in the media companies that have gained from the adoption of energy efficiency practices and establish an award system of best energy efficiency practices in each industry. This study is an extension of the previous literature since we found that financial slack decreases the level of risk aversion, but this does not always translate into energy efficiency practices, as the previous literature assumes.

Keywords: energy efficiency practices; risk aversion; financial slack; mimetic pressure

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1. Introduction

Energy is a key engine of both economic and social development [1]. The global rise in energy consumption resulting from worldwide population growth and industrial development is not only causing a depletion of fossil fuels but also exacerbating climate change [2].

Recognizing the central role of companies in closing the energy efficiency gap, and aiming to enhance both their sustainability and competitiveness, researchers have begun to explore factors that inhibit energy efficiency practices within companies, such as financial barriers [3,4], organizational–managerial barriers [5,6], and behavioral factors [7,8].

Many policies have been implemented worldwide to cope with energy efficiency barriers, assuming rational agents. However, a sizeable energy efficiency potential is still untapped [9]. This could be explained by the weight of behavioral barriers. In this regard, assuming the rationality of agents is considered an underestimation of the energy efficiency gap [10]. Many articles have emphasized the effect of behavioral barriers on energy efficiency [9,11].

Many researchers have found that companies' risk aversion is a prominent behavioral barrier to energy efficiency practices [5,12–14].

Morocco's declared energy goals include accelerating the clean energy transition, becoming a regional energy hub, and supporting the clean energy transition in the African continent [15]. In this regard, enhancing energy efficiency in companies is a priority for the government [16,17]. However, there is still a delay in the adoption of energy efficiency practices by companies in Morocco [18], which is explained by the presence of several barriers including companies' risk aversion [16]. To the best of our knowledge, no empirical research has examined the effect of risk aversion on energy efficiency practices within the Moroccan manufacturing sector.

Risk aversion is a main deterrent to decision making [19], including that related to sustainability [20] and energy efficiency [21,22]. In this research, we examine the negative effect of risk aversion on energy efficiency practices within Moroccan manufacturing companies, and we explore potential drivers to energy efficiency practices that could reduce the intensity of risk aversion.

After a review of the literature on organizational change, we found that financial slack is a vital factor in reducing risk aversion [23–26]. Financial slack refers to a company's underutilized and uncommitted financial resources that could be readily employed to meet its organizational goals [27]. Financial slack is an indicator of companies' financial competence [28]. Financial slack is important not only for reducing risk aversion but also for increasing innovation investment [29]. A high level of financial slack enables experimentation with new and innovative practices and investments [30]. Conversely, companies with a low level of financial slack tend to prioritize short-term profits more. From this point of view, financial slack should be important for promoting energy efficiency practices within companies, reducing risk aversion, and dampening the negative relationship between risk aversion and energy efficiency practices.

Furthermore, we found that mimetic pressure could promote energy efficiency practices within companies [28]. Mimetic pressure occurs when a company voluntarily enters into competition with its peers with the aim of achieving greater performance [31]. A company could tend to copy other companies' best practices in terms of energy efficiency to reduce uncertainty and to be more competitive [32,33]. From this point of view, mimetic pressure should be positively related to energy efficiency practices, should be negatively related to risk aversion, and should dampen the negative relationship between risk aversion and energy efficiency practices.

The existing literature focuses on institutional pressure, including mimetic pressure [34] or financial slack [28], on companies' energy saving activities, and neglects the potential relationship between these two factors and companies' risk aversion regarding energy efficiency practices. Therefore, in this research, we fill this gap by exploring the effects of financial slack and mimetic pressure on companies' risk aversion, and their moderating effect regarding the negative relationship between risk aversion and energy efficiency practices.

Taken together, to enhance our understanding of companies' risk aversion regarding energy efficiency practices, we construct a model that integrates risk aversion, financial slack, and mimetic pressure. We first elaborate the research model and the theoretical background, and then we formulate the research hypotheses. Subsequently, we present the process of data collection and the data analysis method. The results are presented, followed by discussion and policy implications.

2. Theoretical Background and Research Hypotheses

Based on the organizational change literature, we build a model exploring the importance of financial slack and risk aversion in promoting energy efficiency practices and in reducing risk aversion (see Figure 1).

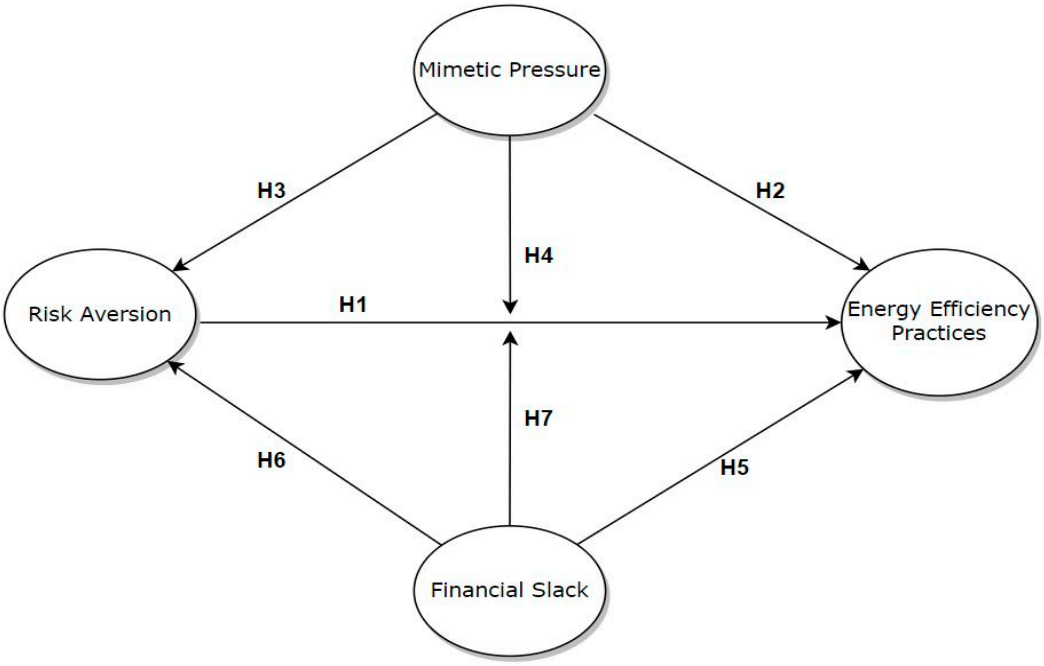


Figure 1. Research model.

2.1. Risk Aversion

Risk refers to the possibility of a negative outcome [35], while risk aversion refers to the perception and the attitude regarding a risk [36]. Risk aversion varies from one agent to another depending on factors such as values and experiences, but most importantly, the same agent could have various levels of risk aversion depending on the stakes involved [9]. Agents tend to be risk averse when the stakes are high (the "peanut effect") [37].

Risk aversion is a barrier to decision making [19] and investments [38], including sustainability investments [20] and energy efficiency practices and investments [22], because many energy efficiency practices are expensive, which could increase companies' risk aversion toward them. Thus, we have the following hypothesis.

Hypothesis 1. *Risk aversion is negatively related to energy efficiency practices.*

2.2. Mimetic Pressure

Institutional theory explains how structures and practices emerge and persist across time within organizations [39]. This theory focuses on how political, economic, and social systems affect how organizations behave [40]. DiMaggio and Powell (1983) classified three types of institutional pressure: coercive pressure, normative pressure, and mimetic pressure [40].

Mimetic pressure stems from pioneers' positive feedback regarding a behavior/practice, which encourages other organizations to emulate the same behavior/practice [41]. Organizational behaviors are thus positively related to mimetic pressure [42–44]. Mimetic pressure is likely to stimulate innovative practices within companies [12] and to enhance companies' environmental behaviors [45–49], including energy efficiency practices [28]. Therefore, we believe that mimetic pressure is positively related to energy efficiency practices.

Hypothesis 2. *Mimetic pressure is positively related to energy efficiency practices.*

Companies could emulate other organizations behaviors/practices as a response to uncertainty in their environment or uncertainty regarding new technologies [50,51]. Thus, memetic pressure could reduce companies' risk aversion [40,52], giving us the following hypothesis.

Hypothesis 3. *Mimetic pressure is negatively related to risk aversion.*

Considering that mimetic pressure could promote energy efficiency practices within companies and could reduce risk aversion, we suggest that mimetic pressure dampens the negative relationship between risk aversion and energy efficiency practices.

Hypothesis 4. *Mimetic pressure dampens the negative relationship between risk aversion and energy efficiency practices.*

2.3. Financial Slack

Slack resources refer to both actual and potential resources that permit an organization to effectively adapt to the internal and external environment [53]. Slack resources can be divided into human resource slack, customer relational slack, organizational slack, operational slack, and financial slack [54]. Organizational theory defines financial slack as companies' available cash and untapped debt potential, and it is indeed easy to convert into other types of slack [26]. All types of slack resources are important. However, financial slack is considered to be the most flexible of slack resources [55] because enough liquidity can be utilized for instance to hire experts and acquire materials that could improve an organization's performance [56].

The existing literature is inconsistent regarding the effects of financial slack on companies' behaviors. For some researchers, financial slack can increase organizational inefficiencies [57], while other researchers consider that a high level of financial slack favors innovation [29]. For another group of researchers, financial slack and innovative practices have an inverted U-shaped relationship [58]. We believe that a high level of financial slack would be vital to promote energy efficiency practices considering that many of them demand a high investment expenditure and require maintenance expenses. On the contrary, a low financial slack would make all environmental issues a lower priority [59]. Thus, we suggest that financial slack is positively related to energy efficiency practices.

Hypothesis 5. *Financial slack is positively related to energy efficiency practices.*

For many researchers, financial slack increases risk aversion [57]. For other researchers, financial slack reduces risk aversion and allows companies to experiment with new practices [23,24,60]. We believe that a high level of financial slack would allow companies to take risks and experiment with new and innovative practices. On the contrary, companies with a low level of financial slack would prioritize less risky activities that provide short-term profits.

Hypothesis 6. *Financial slack is negatively related to risk aversion.*

Considering that financial slack could promote energy efficiency and reduce risk aversion, we believe that companies with a high level of financial slack are more likely to be less risk averse regarding the implementation of energy efficiency practices. Therefore, we have the following hypothesis.

Hypothesis 7. *Financial slack dampens the negative relationship between risk aversion and energy efficiency practices.*

3. Materials and Methods

3.1. Measurement Development

The quality of the questionnaire was ensured by taking several steps. As summarized in Table A1, concepts were precisely described, and the wordings were concise, avoiding those that could be perceived as offensive. The measurements of constructs were developed from previous studies [28,32].

During the pretest phase, we selected 15 respondents with heterogeneous characteristics (department of respondents, location of company's respondents, industry of company's respondents, etc.). Further to the pretest phase, minor revisions were considered, which resulted in the final questionnaire.

3.2. Data Collection

Data collection lasted 4 months from the beginning of May 2022 to the end of August 2022. We distributed printed questionnaires to respondents from manufacturing companies located in the "Fes-Meknes region. An online version of the questionnaire was shared with respondents from manufacturing companies located in three regions: "Tanger-Tétouan-Al Hoceïma", "Casablanca-Settat", and "Rabat-Salé-Kénitra".

Table 1 provides a description of respondents' characteristics, while Table 2 shows the companies' characteristics.

Table 1. Respondents' characteristics (N = 193).

Department	Number	Percentage
Finance	68	35%
Production	42	22%
Technical	39	20%
Top management	34	18%
Others (e.g., logistics, quality)	8	4%

Table 2. Companies' characteristics (N = 193).

		Number	Percentage
Industry	Textiles	42	22%
	Food processing	32	17%
	Automotive	29	15%
	Chemicals and parachemicals	27	14%
	Energy	18	9%
	Aircraft parts	13	7%
	Leather goods	11	6%
	Others (e.g., metal fabrication)	21	11%
Nationality	Moroccan Companies	104	54%
	Multinational Corporations	89	46%
Location	Fès-Meknès	60	31%
	Tanger-Tétouan-Al Hoceïma	52	27%
	Rabat-Salé-Kénitra	41	21%
	Casablanca-Settat	40	21%

From Table 1, it can be seen that most of the questionnaire respondents belong to departments such as financial, production, and technical. They should be eligible to answer questions regarding energy efficiency within their companies as suggested by Zhang et al. (2018) in their empirical research [28].

From Table 2, it can be seen that respondent companies belong to a variety of manufacturing sectors (textiles, food processing, automotives, chemicals, energy, aircraft parts, etc.). Thus, respondent companies are likely to have a different level of energy consumption, which testifies to the heterogeneity of our sampling.

Among the respondent companies, 54% are Moroccan companies while 46% are multinational corporations. This is relevant because multinational corporations could explain the existence of a potential mimetic pressure on local companies [32].

The responding companies are located in four different regions of Morocco. The "Fès-Meknès" region was selected for the sake of convenience. The "Tanger-Tétouan-Al Hoceïma", "Rabat-Salé-Kénitra", and "Casablanca-Settat" regions were selected because they include the biggest industrial cities in Morocco. These regions also include a greater variety of manufacturing sectors and more multinational corporations.

3.3. Data Analysis Method

To analyze the data and examine the research hypotheses, we used the partial least squares structural equation modeling (PLS-SEM) method, which is suitable for testing models with latent variables and practical for analyzing moderating effects [61]. For these reasons, SEM is regarded as the best method to measure both direct and indirect paths [62]. SmartPLS 3 was the software used.

PLS-SEM involves two models of analysis [63]. The first is related to the assessment of the measurement model, which analyzes the relationships between the latent variables and their respective indicators, and the second is related to the structural model, which indicates the relationship among the various latent variables.

In the context of our research, the PLS method was used not only to analyze the relationship between our four latent variables (energy efficiency practices, risk aversion, mimetic pressure, and financial slack) and their corresponding indicators, but also to test our four direct effect hypotheses and our two moderation effect hypotheses.

4. Results

4.1. Measurement Model

4.1.1. Convergent Validity

We start by assessing the convergent validity of the measurement model. First, we assessed factor loadings [64–66]. Indicators with values below 0.7 were removed when this resulted in higher composite reliability and AVE values [67]. Thus, we eliminated four indicators from the analysis (EEP6, EEP7, EEP8, and RA1). All factor loadings in Table 3 are greater than 0.7, which indicates that all items are fairly correlated to their respective construct.

Table 3. Results of measurement model—convergent validity.

Constructs	Items	Loadings	Cronbach's Alpha	CR	AVE
Energy Efficiency Practices	EEP1	0.800	0.934	0.950	0.793
	EEP2	0.848			
	EEP3	0.937			
	EEP4	0.945			
	EEP5	0.914			
Financial Slack	FS1	0.883	0.877	0.923	0.799
	FS2	0.876			
	FS3	0.922			
Mimetic Pressure	MP1	0.912	0.896	0.935	0.828
	MP2	0.864			
	MP3	0.952			
Risk Aversion	RA2	0.939	0.897	0.936	0.830
	RA3	0.932			
	RA4	0.860			

Second, we calculated both Cronbach's alpha and composite reliability to assess the reliability of constructs (Table 3). All constructs have a Cronbach's alpha value above the threshold of 0.7 [68]. Also, all constructs have a composite reliability exceeding the desirable value of 0.7 [69]. Thus, all constructs are internally consistent [70].

Third, we calculated the average variance extracted (AVE). All constructs' AVE is higher than the recommended value of 0.5 (Table 3) [64]. All constructs therefore explain their respective indicators [71].

By following these steps, the convergent validity of the model was established.

4.1.2. Discriminant Validity

To assess the discriminant validity, we first calculated the Fornell–Larcker criterion, and then the HTMT ratio [72,73].

In Table 4, the diagonal values representing the square root of AVE are higher than all the interconstruct correlations. Thus, each latent variable explains the variance of its own indicator better than the variance of all other latent variables.

Table 4. Fornell–Larcker criterion—discriminant validity.

	EEP	FS	MP	RA
Energy Efficiency Practices	0.891			
Financial Slack	0.626	0.894		
Mimetic Pressure	0.515	0.361	0.910	
Risk Aversion	−0.529	−0.431	−0.525	0.911

We also calculated the HTMT ratio to assess the discriminant validity [72]. Table 5 shows that all values are under the 0.85 threshold [74], thus establishing the discriminant validity.

Table 5. HTMT ratio—discriminant validity.

	EEP	FS	MP	RA
Energy Efficiency Practices				
Financial Slack	0.664			
Mimetic Pressure	0.562	0.392		
Risk Aversion	0.578	0.477	0.583	

Discriminant validity was also measured by using the heterotrait–monotrait ratio of correlations (HTMT ratio) [72]. The HTMT ratio measures the similarity between latent variables. The results of the HTMT ratio presented in Table 5 show that all the values are below the threshold of 0.85 [74]. Thus, discriminant validity was established.

4.2. Structural Model

4.2.1. Direct Effect

After assessing the measurement model, we proceeded to the assessment of the structural model. R^2 refers to the proportion of variation in the dependent variable that can be explained by independent variables [75]. Table 6 shows that the R^2 value for energy efficiency practices and risk aversion is higher than the minimum acceptable value of 0.10 [76]. Risk aversion, mimetic pressure, and financial slack together explain 59.9 percent of energy efficiency practices, while both mimetic pressure and financial slack explain 34.3 percent of risk aversion. The R^2 value for risk aversion (34.3 percent) is acceptable, since this endogenous latent variable is explained only by a few (two in this study) exogenous latent variables [66,77].

Table 6. R-squared and Q-squared of the model.

	R-Squared	Q-Squared
Energy Efficiency Practices	0.599	0.429
Risk Aversion	0.343	0.282

Q^2 was calculated to establish the predictive relevance of the endogenous variables. Table 6 indicates that Q^2 for energy efficiency practices and risk aversion is higher than 0 [78], hence the predictive relevance of the model.

In addition, the model was assessed using the standardized root mean square residual (SRMR). According to Hu and Bentler (1999), the SRMR value should be between 0 and 0.08 [79]. As shown in Table 7, the SRMR value is 0.073, which is within the acceptable range for the SRMR index, indicating acceptable model fit.

Table 7. The model fit using SRMR.

	Saturated Model	Estimated Model
SRMR	0.073	0.079

Subsequently, hypotheses were tested to ascertain the relationship between the latent variables. From Table 8, Hypothesis 1, which states that risk aversion is negatively related to energy efficiency practices, is supported ($\beta = -0.407$, t = 6.286, $p < 0.01$). Hypothesis 2, which posits that mimetic pressure is positively related to energy efficiency practices, is supported as well ($\beta = -0.234$, t = 3.541, $p < 0.001$). Mimetic pressure is negatively related to risk aversion ($\beta = -0.525$, t= 10.459, $p < 0.001$), meaning that Hypothesis 3 is supported. Hypothesis 5, which predicts that financial slack is positively related to energy efficiency practices, is supported ($\beta = 0.374$, t = 6.426, $p < 0.001$). Financial slack is negatively related to risk aversion ($\beta = -0.431$, t = 7.824, $p < 0.001$), indicating that Hypothesis 6 is also supported.

Table 8. Path coefficients of the research hypotheses.

		β	STDEV	T-Values	*p*-Values	2.5%	97.5%	Decision
H1	RA -> EEP	−0.407	0.065	6.286	0.000	−0.271	−0.057	Supported
H2	MP > EEP	0.234	0.066	3.541	0.000	0.101	0.362	Supported
H3	MP -> RA	−0.525	0.050	10.459	0.000	−0.521	−0.302	Supported
H5	FS > EEP	0.374	0.058	6.426	0.000	0.272	0.483	Supported
H6	FS -> RA	−0.431	0.055	7.824	0.000	−0.378	−0.143	Supported

4.2.2. Indirect Moderating Effect

Moderation analysis was performed to evaluate the moderation role of mimetic pressure and financial slack. From Table 9, Hypothesis 4, which posits that mimetic pressure dampens the negative relationship between risk aversion and energy efficiency practices, is supported ($\beta = 0.177$, t = 4.799, $p < 0.01$). However, Hypothesis 7, which states that financial slack dampens the negative relationship between risk aversion and energy efficiency practices, is not supported ($\beta = 0.085$, t = 1.676, $p > 0.05$).

Table 9. Indirect moderating effect.

		β	STDEV	T-Values	*p*-Values	2.5%	97.5%	Decision
H4	RA*MP -> EEP	0.177	0.053	4.799	0.000	0.148	0.353	Supported
H7	RA*FS -> EEP	0.085	0.051	1.676	0.094	−0.020	0.176	Not Supported

Results of the structural model are presented in Figure 2.

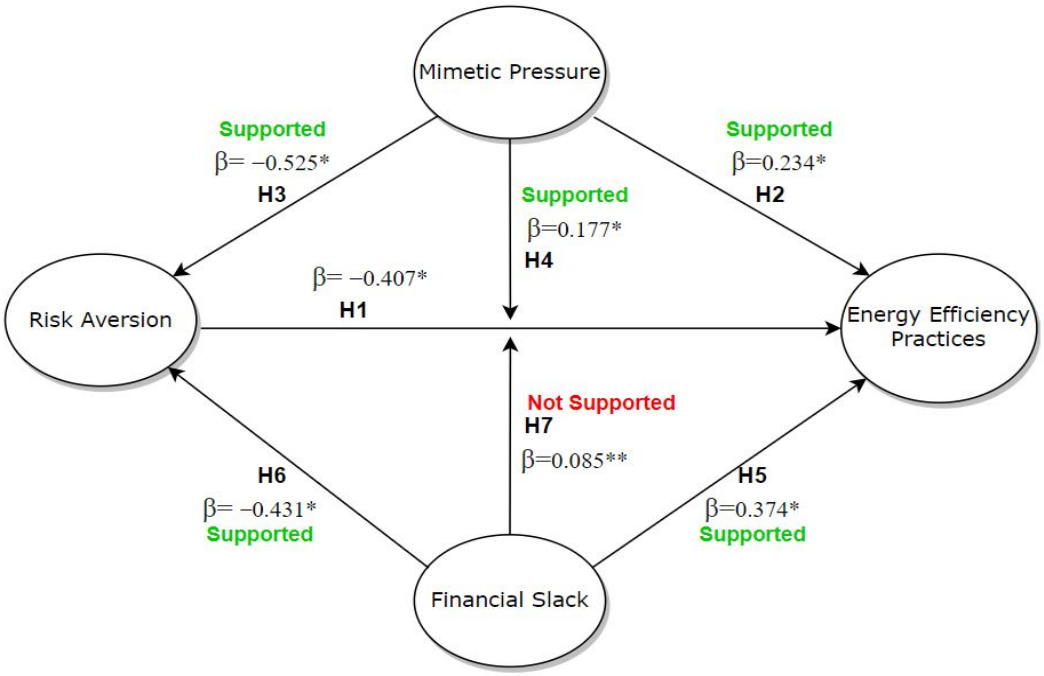


Figure 2. Results of PLS analysis. ** $p < 0.05$; * $p < 0.001$.

5. Discussion

5.1. Discussion of Expected Results

This research focuses on the importance of mimetic pressure and financial slack in decreasing risk aversion regarding energy efficiency practices. The following findings were obtained:

(1) Risk aversion is negatively related to energy efficiency practices. This result is consistent with our previous expectation. The previous literature assumes that a high level of risk perception within companies decreases the likelihood of adopting sustainability practices, including energy efficiency [5,80].

(2) Mimetic pressure is positively related to energy efficiency practices. This result is consistent with our previous expectation. The previous literature assumes that companies are more likely to adopt energy efficiency practices that their peers have benefited from [28,32,33].

(3) Mimetic pressure is negatively related to risk aversion. This result is consistent with our previous expectation. The previous literature assumes that companies that perceive higher mimetic pressure are more likely to have reduced uncertainty and less likely to be risk averse [50,81].

(4) Mimetic pressure dampens the negative relationship between risk aversion and energy efficiency practices. This result is consistent with our previous expectation. The previous literature assumes that external pressure (in this case, mimetic pressure) could play a moderating role to improve sustainability within companies [48].

(5) Financial slack is positively related to energy efficiency practices. This result is consistent with our previous expectation. The previous literature is inconsistent regarding the effects of financial slack on sustainability practices, including energy efficiency. For some researchers, financial slack leads to more energy efficiency practices within companies [51]. For other researchers, financial slack inhibits energy saving within companies [82]. For a third group of researchers, financial slack does not accelerate energy efficiency practices within companies, unless it is mediated by other factors [28].

(6) Financial slack is negatively related to risk aversion. This result is consistent with our previous expectation. The previous literature assumes that a high level of financial slack leads companies to be less risk averse [83,84].

These results suggest that companies are risk averse regarding the adoption of energy efficiency practices. Companies are more likely to adopt energy efficiency practices that their peers have benefited from. Moreover, companies that perceive higher mimetic pressure are less likely to be risk averse regarding the adoption of energy efficiency practices. A high level of financial slack not only leads to more energy efficiency practices within companies, but also leads them to be less risk averse.

5.2. Discussion of Unexpected Results

There is one hypothesis that is not supported. Financial slack does not dampen the negative relationship between risk aversion and energy efficiency practices. This result is inconsistent with our previous expectation. The previous literature assumes that a high level of financial slack directly reduces risk aversion and also translates into innovative practices/behaviors [83,84].

Therefore, our result is an extension of the previous literature since we found that financial slack decreases the level of risk aversion, but that this does not always translate into innovative practices/behaviors (energy efficiency practices in this case) as the previous literature assumes.

One possible explanation for this result is that even if a high level of financial slack makes companies less averse to risk, that could lead them to invest in their production activity rather than investing in energy efficiency [24].

Table 10 shows that Hypotheses 1, 2, 3, 4, and 6 are consistent with the previous literature. Hypothesis 5 is consistent with some of the existing literature, while Hypothesis 7 is inconsistent with the existing literature.

Table 10. Comparison between previous studies' results and the current study's results.

		Reference	Findings
Previous studies	H1	[5,80]	High level of risk aversion decreases sustainability practices
	H2	[28,32,33]	Companies are more likely to adopt EEP that their peers have benefited from
	H3	[50,81]	Companies that perceive higher mimetic pressure are less likely to be risk averse
	H4	[48]	External pressure could play a moderating role to improve sustainability within companies
	H5	[51]	Financial slack leads to more energy efficiency practices within companies
		[82]	Financial slack inhibits energy saving within companies
		[28]	Financial slack does not accelerate energy efficiency practices within companies, unless it is mediated by other factors
	H6	[83,84]	High level of financial slack leads companies to be less risk averse
	H7	[83,84]	High level of financial slack directly reduces risk aversion, and this translates into innovative practices/behaviors
Current study	H1		High level of risk aversion decreases sustainability practices
	H2		Companies are more likely to adopt EEP that their peers have benefited from
	H3		Companies that perceive higher mimetic pressure are less likely to be risk averse
	H4		External pressure could play a moderating role to improve sustainability within companies
	H5		Financial slack leads to more energy efficiency practices within companies
	H6		High level of financial slack leads companies to be less risk averse
	H7		Financial slack decreases the level of risk aversion, but this does not always translate into energy efficiency practices

6. Conclusions and Policy Implications

We have built and tested a research model that includes mimetic pressure and financial slack as factors to decrease risk aversion regarding energy efficiency practices within the Moroccan manufacturing sector. We collected data through printed and online questionnaires that we provided to manufacturing companies in four Moroccan regions. Ultimately, 193 valid questionnaires were obtained.

Based on our findings, our study has the following policy implications. Mimetic pressure is an important factor for reducing risk aversion regarding energy efficiency practices. From this point of view, the government could publicize in the media companies that have gained from the adoption of energy efficiency practices [28]. The government could also establish an award system of best energy efficiency practices in each industry [85–87]. Thus, by promoting the early adoption of energy efficiency practices, other companies would tend to adopt these practices and would be less risk averse. Moreover, the government could further encourage multinational corporations to invest in Morocco since they could exert mimetic pressure on local companies [32].

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Appendix A

Table A1. Measurement items for latent variables.

Variable	Code	Wording
Energy Efficiency Practices	EEP1	You adopt daily routines related to energy efficiency in the workplace (lighting, air conditioning, etc.).
	EEP2	Your company tracks the energy consumption of its production units.
	EEP3	Your company invests in new machinery and facilities to reduce its energy consumption.
	EEP4	Clean energy sources are used within your company (solar panels, etc.) to reduce energy consumption.
	EEP5	Your company conducts voluntary energy audits to identify EE potential.
Financial Slack	FS1	Your company is in a satisfactory financial position.
	FS2	Your company has sufficient financial resources to finance its future investments.
	FS3	Your company could obtain external financing for its future investments.
Mimetic	MP1	The leading companies in the sector have already adopted energy saving practices.
	MP2	The leading companies in the sector that have adopted EEP are favorably perceived by other companies within the sector.

Table A1. *Cont.*

Variable	Code	Wording
Pressure	MP3	The leading companies in the sector have gained a competitive advantage by adopting EEP.
Risk	RA2	Your company has been cautious in adopting EEP in the past.
	RA3	The risk regarding energy efficiency practices stops your company from adopting them, regardless of their benefits.
Aversion	RA4	Your company is more concerned about the potential losses than the possible gains regarding EEP.

All indicators are measured using a five-point Likert scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree.

References

1. Ott, G. The global energy context—Chances and challenges for the 21st century. In Proceedings of the International Symposium on the Uranium Production Cycle and the Environment, Vienna, Austria, 2–6 October 2000.
2. Zafar, S.S. *Barriers Involve in the Energy Efficiency in the Manufacturing Industries of Pakistan*; 2021; pp. 293–299. Available online: http://www.zbw.eu/econis-archiv/bitstream/11159/7660/1/1769944168_0.pdf (accessed on 22 August 2022).
3. Sardianou, E. Barriers to industrial energy efficiency investments in Greece. *J. Clean. Prod.* **2008**, *16*, 1416–1423. [CrossRef]
4. Apeaning, R.W.; Thollander, P. Barriers to and driving forces for industrial energy efficiency improvements in African industries—A case study of Ghana's largest industrial area. *J. Clean. Prod.* **2013**, *53*, 204–213. [CrossRef]
5. Rohdin, P.; Thollander, P.; Solding, P. Barriers to and drivers for energy efficiency in the Swedish foundry industry. *Energy Policy* **2007**, *35*, 672–677. [CrossRef]
6. Soepardi, A.; Thollander, P. Analysis of relationships among organizational barriers to energy efficiency improvement: A case study in Indonesia's steel industry. *Sustainability* **2018**, *10*, 216. [CrossRef]
7. Palm, J.; Thollander, P. An interdisciplinary perspective on industrial energy efficiency. *Appl. Energy* **2010**, *87*, 3255–3261. [CrossRef]
8. Cagno, E.; Worrell, E.; Trianni, A.; Pugliese, G. A novel approach for barriers to industrial energy efficiency. *Renew. Sustain. Energy Rev.* **2013**, *19*, 290–308. [CrossRef]
9. Cattaneo, C. Internal and external barriers to energy efficiency: Which role for policy interventions? *Energy Effic.* **2019**, *12*, 1293–1311. [CrossRef]
10. König, W. Energy efficiency in industrial organizations-a culturalinstitutional framework of decision making. *Energy Res. Soc. Sci.* **2020**, *60*, 101314. [CrossRef]
11. Abrardi, L. Behavioral barriers and the energy efficiency gap: A survey of the literature. *J. Ind. Bus. Econ.* **2019**, *46*, 25–43. [CrossRef]
12. Lutzenhiser, L. Innovation and organizational networks Barriers to energy efficiency in the US housing industry. *Energy Policy* **1994**, *22*, 867–876. [CrossRef]
13. Janipour, Z.; de Nooij, R.; Scholten, P.; Huijbregts, M.A.; de Coninck, H. What are sources of carbon lock-in in energy-intensive industry? A case study into Dutch chemicals production. *Energy Res. Soc. Sci.* **2020**, *60*, 101320. [CrossRef]
14. Liu, Y. Barriers to the adoption of low carbon production: A multiple-case study of Chinese industrial firms. *Energy Policy* **2014**, *67*, 412–421. [CrossRef]
15. IEA. *Energy Policies beyond IEA Countries: Morocco 2019*; IEA: Paris, France, 2019. Available online: https://www.iea.org/reports/energy-policies-beyond-iea-countries-morocco-2019 (accessed on 15 August 2022).
16. Mohamed, B. *Stratégies de Développement Durable en Efficacité Energétique au Maroc*; 2017; Available online: https://idl-bnc-idrc.dspacedirect.org/bitstream/handle/10625/58969/IDL%20-%2058969.pdf?sequence=2 (accessed on 5 September 2022).
17. El Iysaouy, L.; El Idrissi, N.; Tvaronavičienė, M.; Lahbabi, M.; Oumnad, A. Towards energy efficiency: Case of Morocco. *Insights Into Reg. Dev.* **2019**, *1*, 259–271. [CrossRef] [PubMed]
18. Barradi, T. *Un Aperçu de la Situation de L'Efficacité Energétique des Ménages au Maroc*; Heinrich-Böll-Stiftung: Rabat, Morocco, 2019.
19. Tulloch, A.I.; Maloney, R.F.; Joseph, L.N.; Bennett, J.R.; Di Fonzo, M.M.; Probert, W.J.; O'Connor, S.M.; Densem, J.P.; Possingham, H.P. Effect of risk aversion on prioritizing conservation projects. *Conserv. Biol.* **2015**, *29*, 513–524. [CrossRef]
20. Bai, Q.; Xu, J.; Chauhan, S.S. Effects of sustainability investment and risk aversion on a two-stage supply chain coordination under a carbon tax policy. *Comput. Ind. Eng.* **2020**, *142*, 106324. [CrossRef]
21. Farsi, M. Risk aversion and willingness to pay for energy efficient systems in rental apartments. *Energy Policy* **2010**, *38*, 3078–3088. [CrossRef]
22. Rockstuhl, S.; Wenninger, S.; Wiethe, C.; Häckel, B. Understanding the risk perception of energy efficiency investments: Investment perspective vs. energy bill perspective. *Energy Policy* **2021**, *159*, 112616. [CrossRef]
23. Rafailov, D. Financial slack and performance of Bulgarian firms. *J. Financ. Bank Manag.* **2017**, *5*, 1–13. [CrossRef]

24. Lu, L.H.; Wong, P.K. Performance feedback, financial slack and the innovation behavior of firms. *Asia Pac. J. Manag.* **2019**, *36*, 1079–1109. [CrossRef]
25. Rodrigues dos Santos, R.; Florencio dos Santos, J. Influence of financial slack on earnings management among Brazilian credit unions. *Rev. Educ. E Pesqui. Em Contab.* **2020**, *14*, 443–458.
26. George, G. Slack resources and the performance of privately held firms. *Acad. Manag. J.* **2005**, *48*, 661–676. [CrossRef]
27. Guo, F.; Zou, B.; Zhang, X.; Bo, Q.; Li, K. Financial slack and firm performance of SMMEs in China: Moderating effects of government subsidies and market-supporting institutions. *Int. J. Prod. Econ.* **2020**, *223*, 107530. [CrossRef]
28. Zhang, Y.; Wei, Y.; Zhou, G. Promoting firms' energy-saving behavior: The role of institutional pressures, top management support and financial slack. *Energy Policy* **2018**, *115*, 230–238. [CrossRef]
29. Zhang, K.; Wang, J.J.; Sun, Y.; Hossain, S. Financial slack, institutional shareholding and enterprise innovation investment: Evidence from China. *Account. Financ.* **2021**, *61*, 3235–3259. [CrossRef]
30. Parida, V.; Örtqvist, D. Interactive effects of network capability, ICT capability, and financial slack on Technology-Based small firm innovation performance. *J. Small Bus. Manag.* **2015**, *53*, 278–298. [CrossRef]
31. Latan, H.; Jabbour, C.J.C.; de Sousa Jabbour, A.B.L.; Wamba, S.F.; Shahbaz, M. Effects of environmental strategy, environmental uncertainty and top management's commitment on corporate environmental performance: The role of environmental management accounting. *J. Clean. Prod.* **2018**, *180*, 297–306. [CrossRef]
32. Latif, B.; Mahmood, Z.; Tze San, O.; Mohd Said, R.; Bakhsh, A. Coercive, normative and mimetic pressures as drivers of environmental management accounting adoption. *Sustainability* **2020**, *12*, 4506. [CrossRef]
33. Preziosi, M.; Federici, A.; Merli, R. Evaluating the Impact of Public Information and Training Campaigns to Improve Energy Efficiency: Findings from the Italian Industry. *Energies* **2022**, *15*, 1931. [CrossRef]
34. Liu, X.; Niu, D.; Bao, C.; Suk, S.; Shishime, T. A survey study of energy saving activities of industrial companies in Taicang, China. *J. Clean. Prod.* **2012**, *26*, 79–89. [CrossRef]
35. Yates, J.F.; Stone, E.R. *The Risk Construct*; John Wiley & Sons: New York, NY, USA, 1992.
36. Bradley, R.; Stefánsson, O. What is risk aversion. *Br. J. Philos. Sci.* **2017**, *70*, 77–102.
37. Harris, N.; Shealy, T.; Parrish, K.; Granderson, J. Cognitive barriers during monitoring-based commissioning of buildings. *Sustain. Cities Soc.* **2019**, *46*, 101389. [CrossRef]
38. Maurovich-Horvat, L.; De Reyck, B.; Rocha, P.; Siddiqui, A.S. Optimal selection of distributed energy resources under uncertainty and risk aversion. *IEEE Trans. Eng. Manag.* **2016**, *63*, 462–474. [CrossRef]
39. De Jonge, A. *Study 2. The Glass Ceiling in Chinese and Indian Boardrooms*; Elsevier: Amsterdam, The Netherlands, 2015; pp. 119–138. [CrossRef]
40. DiMaggio, P.J.; Powell, W.W. The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *Am. Sociol. Rev.* **1983**, *48*, 147–160. [CrossRef]
41. Deng, Q.; Ji, S. Organizational green IT adoption: Concept and evidence. *Sustainability* **2015**, *7*, 16737–16755. [CrossRef]
42. Chen, X.; Yi, N.; Zhang, L.; Li, D. Does institutional pressure foster corporate green innovation? Evidence from China's top 100 companies. *J. Clean. Prod.* **2018**, *188*, 304–311. [CrossRef]
43. Jiao, H.; Yang, J.; Cui, Y. Institutional pressure and open innovation: The moderating effect of digital knowledge and experience-based knowledge. *J. Knowl. Manag.* **2021**, *26*, 2499–2527. [CrossRef]
44. Hu, J.; Wang, K.H.; Su, C.W.; Umar, M. Oil price, green innovation and institutional pressure: A China's perspective. *Resour. Policy* **2022**, *78*, 102788. [CrossRef]
45. Delmas, M.A.; Toffel, M.W. 10. Institutional pressure and environmental management practices. In *Stakeholders, the Environment and Society*; Edward Elgar Publishing: Cheltenham, UK, 2004; Volume 230.
46. Garrone, P.; Grilli, L.; Mrkajic, B. The role of institutional pressures in the introduction of energy-efficiency innovations. *Bus. Strategy Environ.* **2018**, *27*, 1245–1257. [CrossRef]
47. Lui, A.K.; Lo, C.K.; Ngai, E.W.; Yeung, A.C. Forced to be green? The performance impact of energy-efficient systems under institutional pressures. *Int. J. Prod. Econ.* **2021**, *239*, 108213. [CrossRef]
48. Zeng, H.; Chen, X.; Xiao, X.; Zhou, Z. Institutional pressures, sustainable supply chain management, and circular economy capability: Empirical evidence from Chinese eco-industrial park firms. *J. Clean. Prod.* **2017**, *155*, 54–65. [CrossRef]
49. Zhu, Q.; Cordeiro, J.; Sarkis, J. Institutional pressures, dynamic capabilities and environmental management systems: Investigating the ISO 9000–Environmental management system implementation linkage. *J. Environ. Manag.* **2013**, *114*, 232–242. [CrossRef] [PubMed]
50. Cai, S.; De Souza, R.; Goh, M.; Li, W.; Lu, Q.; Sundarakani, B. The adoption of green supply chain strategy: An institutional perspective. In Proceedings of the 2008 4th IEEE International Conference on Management of Innovation and Technology, Bangkok, Thailand, 21–24 September 2008; pp. 1044–1049.
51. Zhang, Y.; Yang, J.; Liu, M. Enterprises' energy-saving capability: Empirical study from a dynamic capability perspective. *Renew. Sustain. Energy Rev.* **2022**, *162*, 112450. [CrossRef]
52. Paauwe, J.; Boselie, P. Challenging 'strategic HRM' and the relevance of the institutional setting. *Hum. Resour. Manag. J.* **2003**, *13*, 56–70. [CrossRef]
53. Bourgeois, L.J., III. On the measurement of organizational slack. *Acad. Manag. Rev.* **1981**, *6*, 29–39. [CrossRef]

54. Voss, G.B.; Sirdeshmukh, D.; Voss, Z.G. The effects of slack resources and environmentalthreat on product exploration and exploitation. *Acad. Manag. J.* **2008**, *51*, 147–164. [CrossRef]
55. Claveau, N.; Perez, M.; Prim-Allaz, I.; Teyssier, C. Slack financier et forte croissance dans la PME. *Rev. De L'Entrepreneuriat* **2013**, *12*, 71–99. [CrossRef]
56. Danneels, E. Organizational antecedents of second-order competences. *Strateg. Manag. J.* **2008**, *29*, 519–543. [CrossRef]
57. Mousa, F.T.; Reed, R. The impact of slack resources on high–tech IPOs. *Entrep. Theory Pract.* **2013**, *37*, 1123–1147. [CrossRef]
58. Kim, H.; Kim, H.; Lee, P.M. Ownership structure and the relationship between financial slack and R&D investments: Evidence from Korean firms. *Organ. Sci.* **2008**, *19*, 404–418.
59. Henriques, I.; Sadorsky, P. The determinants of an environmentally responsive firm: An empirical approach. *J. Environ. Econ. Manag.* **1996**, *30*, 381–395. [CrossRef]
60. Bradley, S.W.; Shepherd, D.A.; Wiklund, J. The importance of slack for new organizations facing 'tough' environments. *J. Manag. Stud.* **2011**, *48*, 1071–1097. [CrossRef]
61. Zhang, Y.; Wang, Z.; Zhou, G. Determinants of employee electricity saving: The role of social benefits, personal benefits and organizational electricity saving climate. *J. Clean. Prod.* **2014**, *66*, 280–287. [CrossRef]
62. Iqbal, S.; Moleiro Martins, J.; Nuno Mata, M.; Naz, S.; Akhtar, S.; Abreu, A. Linking entrepreneurial orientation with innovation performance in SMEs; the role of organizational commitment and transformational leadership using smart PLS-SEM. *Sustainability* **2021**, *13*, 4361. [CrossRef]
63. Lacroux, A. L'analyse des modèles de relations structurelles par la méthode PLS: Une approche émergente dans la recherche quantitative en GRH. In Proceedings of the XXème Congrès de l'AGRH, Toulouse, France, 6–9 September 2009; Volume 9.
64. Fornell, C.; Larcker, D.F. Evaluating structural equation models with unobservable variables and measurement error. *J. Mark. Res.* **1981**, *18*, 39–50. [CrossRef]
65. Bagozzi, R.P.; Yi, Y. On the evaluation of structural equation models. *J. Acad. Mark. Sci.* **1988**, *16*, 74–94. [CrossRef]
66. Henseler, J.; Ringle, C.M.; Sinkovics, R.R. The use of partial least squares path modeling in international marketing. In *New Challenges to International Marketing*; Emerald Group Publishing Limited: Bingley, UK, 2009.
67. Hair, J.; Hult, G.T.M.; Ringle, C.; Sarstedt, M. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*; SAGE Publications, Incorporated: Los Angeles, CA, USA, 2014.
68. Adadan, E.; Savasci, F. An analysis of 16–17-year-old students' understanding of solution chemistry concepts using a two-tier diagnostic instrument. *Int. J. Sci. Educ.* **2012**, *34*, 513–544. [CrossRef]
69. Lenny, P.Y.; Kridanto, S. Analysis of user acceptance, service quality, and customer satisfaction of hospital management information system. In *Journal of Physics: Conference Series*; IOP Publishing: Bristol, UK, 2019; Volume 1193, p. 012001.
70. Netemeyer, R.G.; Bearden, W.O.; Sharma, S. *Scaling Procedures: Issues and Applications*; Sage Publications: Thousand Oaks, CA, USA, 2003.
71. Dos Santos, P.M.; Cirillo, M.Â. Construction of the average variance extracted index for construct validation in structural equation models with adaptive regressions. *Commun. Stat.-Simul. Comput.* **2021**, *4*, 1–13. [CrossRef]
72. Henseler, J.; Ringle, C.M.; Sarstedt, M. A new criterion for assessing discriminant validity in variance-based structural equation modeling. *J. Acad. Mark. Sci.* **2015**, *43*, 115–135. [CrossRef]
73. Ab Hamid, M.R.; Sami, W.; Sidek, M.M. Discriminant validity assessment: Use of Fornell & Larcker criterion versus HTMT criterion. In *Journal of Physics: Conference Series*; IOP Publishing: Bristol, UK, 2017; Volume 890, p. 012163.
74. Kline, R.B. *Principles and Practice of Structural Equation Modeling (3. Baskı)*; Guilford: New York, NY, USA, 2011; Volume 14, pp. 1497–1513.
75. Hair, J.F.; Ringle, C.M.; Sarstedt, M. PLS-SEM: Indeed a silver bullet. *J. Mark. Theory Pract.* **2011**, *19*, 139–152. [CrossRef]
76. Falk, R.F.; Miller, N.B. *A Primer for Soft Modeling*; University of Akron Press: Akron, OH, USA, 1992.
77. Chin, W.W. The partial least squares approach to structural equation modeling. *Mod. Methods Bus. Res.* **1998**, *295*, 295–336.
78. Janadari, M.P.N.; Sri Ramalu, S.; Wei, C.; Abdullah, O.Y. Evaluation of measurment and structural model of the reflective model constructs in PLS–SEM. In Proceedings of the 6th International Symposium—2016 South Eastern University of Sri Lanka (SEUSL), Oluvil, Sri Lanka, 20–21 December 2016; pp. 20–21.
79. Hu, L.T.; Bentler, P.M. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Struct. Equ. Model. Multidiscip. J.* **1999**, *6*, 1–55. [CrossRef]
80. Jaffe, A.B.; Stavins, R.N. The energy-efficiency gap What does it mean? *Energy Policy* **1994**, *22*, 804–810. [CrossRef]
81. Lin, J.; Luo, Z.; Benitez, J.; Luo, X.R.; Popovič, A. Why do organizations leverage social media to create business value? An external factor-centric empirical investigation. *Decis. Support Syst.* **2021**, *151*, 113628. [CrossRef]
82. Zhang, Y.; Zhou, W.; Liu, M. Driving factors of enterprise energy-saving and emission reduction behaviors. *Energy* **2022**, *256*, 124685. [CrossRef]
83. Herold, D.M.; Jayaraman, N.; Narayanaswamy, C.R. What is the relationship between organizational slack and innovation? *J. Manag. Issues* **2006**, *18*, 372–392.
84. Iyer, D.N.; Miller, K.D. Performance feedback, slack, and the timing of acquisitions. *Acad. Manag. J.* **2008**, *51*, 808–822.
85. Manan, Z.A.; Shiun, L.J.; Alwi, S.R.W.; Hashim, H.; Kannan, K.S.; Mokhtar, N.; Ismail, A.Z. Energy Efficiency Award system in Malaysia for energy sustainability. *Renew. Sustain. Energy Rev.* **2010**, *14*, 2279–2289. [CrossRef]

86. Telaga, A.S.; Hartanto, I.D. Industrial energy efficiency practices in Indonesia: Lesson learned from astra green energy (AGen) award. In *IOP Conference Series: Materials Science and Engineering*; IOP Publishing: Bristol, UK, 2017; Volume 180, p. 012110.
87. Jones, L.A.; Josephine, F. Drivers to energy efficiency development in lighting and air-conditioning systems in manufacturing industries in Ghana for 2018. *J. Geogr. Reg. Plan.* **2019**, *12*, 34–42. [CrossRef]