



The Decision-Making Journey of How-to Making Cooperation with Solar PV Developer Company to Install Solar PV in Indonesia: A Qualitative Study

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ABSTRACT: This study explores the current purchasing behavior of companies in forming partnerships with solar PV developer companies (B2B), using a decision journey methodology. It investigates the impact of implementing renewable energy, particularly solar PV, in Indonesia, as well as the encouragement from local government to accelerate solar PV development. Additionally, Indonesia's substantial solar PV potential has intensified competition among solar PV development companies to capture new markets. PT. XYZ aims to expand its market share using the decision journey methodology, driven by a significant market gap of approximately 300 trillion compared to its two main competitors.

Through qualitative analysis, including interviews with five representatives from a large company in the business electricity sector with over 50 tenant companies, insights were gathered into the diverse decision-making processes within this service category. The findings underscore the importance of tailored marketing strategies based on product attributes. Overall, this research illuminates evolving consumer behavior in forming partnerships with solar PV developer companies through a B2B market approach, offering valuable insights for strategic marketing.

KEYWORDS: Competitor Analysis, Customer Analysis, Decision Journey, Hierarchy of Effect, Marketing Strategy B2B, Marketing Mix, STP Analysis.

INTRODUCTION

The increasing demand for electricity in Indonesia every year, which is estimated to be at a consumption level of 1,173 kwh per capita in 2022 (ministry of energy and mineral resources, 2022). The rate of increase in electricity consumption is the highest in the past five decades, at 4% compared to 2021 (year-on-year/yoy). The Indonesian government is trying to balance this high rate of electricity consumption by implementing renewable energy, which can reduce greenhouse gas emissions and achieve net zero emission with a target of 23% by 2025. The ministry of national development planning states that the greatest potential for renewable energy in Indonesia is in the development of solar PV, which accounts for up to 50% compared to other renewable energy developments. This is also due to Indonesia's location on the equator, where the sun shines throughout the year, and the energy generated from solar power is 4.8 kwh/m², equivalent to 112,000 gwp. The shift from fossil fuels to renewable energy poses both a threat and a significant opportunity for existing and new companies, particularly mining companies looking to expand into renewable energy business. Therefore, many new companies are emerging in the field of solar PV development in Indonesia. One of them is pt. Xyz, which is also engaged in solar PV development. After benchmarking with two other solar PV development companies, there is a revenue gap of around 300 trillion compared to the two competitor companies. From this gap, this study focuses on analyzing consumer behavior surrounding the installation of solar PV as an effort to attract new clients and increase income.

LITERATURE REVIEW

A. Consumer Behavior

Every individual exhibit distinct consumer tendency, encompassing decision-making patterns unique to each person. Consumer behavior, a multifaceted phenomenon, draws influence from diverse fields such as psychology, sociology, anthropology, and economics, indicating its interdisciplinary nature (Ariyani et al., 2019). It encompasses the actions undertaken by individuals in the procurement, utilization, and assessment of goods and services, encompassing the pre- and post-purchase decision-making processes



(Tjiptono, 2001). Another perspective defines consumer behaviour as the exploration of how individuals, communities, and organizations navigate the selection, acquisition, usage, and disposal of goods, services, ideas, or experiences in alignment with their preferences and requirements (Kotler & Keller, Marketing Management, 2016). In essence, consumer behaviour represents a dynamic process wherein individuals evaluate products or services, drawing upon their perceptions, experiences, and myriad considerations to fulfil their needs and aspirations.

B. Consumer Purchase Decision Making

The decision-making process leading to a purchase involves stages encompassing actions taken prior to acquiring the product and the repercussions felt post-consumption (Ferawati, 2019). It is a multifaceted journey individuals undertake when deliberating whether to procure a particular product or service, influenced by an array of personal, psychological, social, and situational factors (Hawkins, Mothersbaugh, & Best, 2019). This decision-making process unfolds through distinct phases, commencing with problem recognition, followed by information search, evaluation of alternatives, purchase decision, and post-purchase assessment (Solomon, 2019). In the problem recognition phase, consumers identify their needs, spurred by internal or external stimuli (Agrawal, 2006). Information search entails gathering product details from various sources, spanning personal, commercial, public, and experimental realms (Kotler, 2017). During the evaluation of alternatives, consumers juxtapose different products based on criteria such as quality, price, and features. Subsequently, in the purchase decision stage, consumers make a choice based on their assessment, whether through planned or impulsive means (Kacen & Lee, 2002). Finally, post-purchase evaluation reflects consumers' contentment or discontent with the product, shaping future purchasing behaviours and influencing others' decisions.

C. Decision Rule

Decision rules serve as guiding principles employed by decision makers to choose the most appropriate option among several alternatives based on available information (Jiang, 2022). These rules offer structured frameworks for evaluating choices, ensuring consistent assessment of criteria and factors. Key decision rules encompass:

- **Conjunctive Rule:** This rule ensures that a product satisfies all essential attributes while lacking undesirable characteristics, thus meeting minimum acceptability criteria (Hauser, 2014).
- **Lexicographic Rule:** It involves ranking product aspects by importance and assessing options based on performance in each aspect, prioritizing those with higher-ranking attributes (Hauser, 2014).
- **Heuristic Decision:** This approach employs mental shortcuts to streamline decision-making processes, reducing effort by relying on existing knowledge or expert opinion (Pathak et al., 2022). Common heuristics include brand Loyalty Heuristic, which involves purchasing familiar brands without compared option (Gigerenzer & Gaissmaier, 2011). Another is Satisfied Heuristic, which opts for the first acceptable choice rather than seeking the optimal one (Gigerenzer & Gaissmaier, 2011). Lastly, Social Influence Heuristic makes decisions based on cues like popularity or recommendations from trusted individuals (Gigerenzer & Gaissmaier, 2011).

RESEARCH METHOD

The primary aim of this to understand the prevailing behaviors of consumers when purchasing installation of solar PV. To achieve this, this study employs the decision journey model to delve into consumer behavior, focusing specifically on the decision rules consumers follows when selecting a company to dealing cooperation for install solar PV (B2B) and how these choices are influence by hierarchy of effects. Primary data is used to get data. Primary data is information gathered directly by the researcher for the aim of addressing the study subject at hand. It is data sourced by the researcher rather than data collected earlier by others (Creswell & Cresswell, 2017).

A qualitative research approach has been adopted, lever ranging semi-structured interviews to gather data directly from consumers. Semi-structure interview enable interviewer to use some pre-determined questions or topic but not limited to that topic. Interviewer could ask more to get deeper understanding of the answer and could vary the question order, it balance the topic focus and flexibility (Adam, 2015). A total of five representative of a large company of electricity business area in Indonesia, who regularly need to install solar PV, participated in these interviews. The large company of electricity business area had an several tenant company in their land, so in this interview the researcher wants to ask in two perspectives. First perspective for operational of their company, and second perspective for the tenant company in their land. The interview questions were meticulously design for each step of the



decision journey until purchase decision. Loyalty is not involved due to objective is until purchase decision. This methodical approach aims to provide a comprehensive understanding of the factors that guide consumer decision in making cooperation for install solar PV (B2B), offering valuable insight to consumer preferences and behaviors.

A. Table Interview Question

NO	INTERVIEW QUESTIONS	SCOPE	OBJECTIVE
1	What key factors do you take into account when considering the installation of a solar PV system for your business? Please address this from the perspectives of both a large company and a tenant company operating on their property.	Problem Recognition <ul style="list-style-type: none"> Internal Factors (sustainability objectives, budget limitations, risk mitigation) External Factors (regulatory shifts, market developments, industry norms, customer expectations) 	To know what is the first trigger that makes people intended to dealing cooperation for instal solar PV
2	Will you evaluate relevant information before adopting Solar PV services? If yes, where do you typically seek this information?	Information Search <ul style="list-style-type: none"> Personal Connections (e.g., business partners, friends, family) Commercial (e.g., Ads) Public Sources (e.g., testimonials, success stories) Experiential (e.g., based on personal experience) 	To know the main source of information that the customer used to compare the product they want to buy
3	When evaluating multiple alternatives, what factors will you consider regarding the product/service, price, location, and promotion? Are tenant companies permitted to suggest the solar PV system they prefer?	Evaluation of Alternatives <ul style="list-style-type: none"> Product Price Place Promotion 	To know what is the most important attributes in comparing one product to another
4	How do you prioritize and exclude products or services during your decision-making process for selecting solar PV solutions?	Purchase Decision <ul style="list-style-type: none"> Planned Purchase Impulsive Purchase 	To know whether they plan before dealing or not and whether they will to plan or not while dealing

Source: Primary Data Processed

RESULT AND DISCUSSION

The result of the interviews conducted with five large company electricity business area that estimated had around 50 tenant company in their land shed light on their decision journey from problem recognition to final purchase. Participants articulated various stage in their decision-making process, reflecting nuanced approach influenced by individual preferences and situational factors. Initially, participant identified needs or desires, often triggered by internal or external stimuli. This initial recognition prompted them to embark on an information search, utilizing diverse sources such as personal experiences, recommendation from peers, and online research. As they gathered information, participants engaged in evaluating alternative, weighing factors like quality, price, and brand reputation. This evaluative process was dynamic, with participants often revisiting earlier stage based on new information or changing preferences. Ultimately, participants reached a purchase decision, guided by combination of rational consideration and emotional inclinations. The interviews revealed a complex interplay of cognitive and effective factors shaping participants' decision journey, highlighting the multifaceted nature of consumer behaviour in the purchasing process.



A. Table Interview Answers

NO	QUESTION	SCOPE	ANSWER
1	Preliminary Question	Has your company already put into practice or utilized solar PV technology?	<p>Two representative from the companies (interviewees) answer: "Yes, we are currently utilizing solar PV for our operations, along with other renewable energies like biomass and solar." "Yes, we are already using solar PV for our operations, as well as other renewable energy sources."</p> <p>Three of representative from the companies (interviewees) answer: "Not yet, because our office is situated in a geographical location near a cement factory, resulting in a significant amount of vapor" "Not yet, as our business operations are continuously busy 24 hours a day, requiring uninterrupted electrical support. Even a one-minute power outage would result in significant losses for us." "Not yet, as we perceive solar PV technology to be more costly than traditional electricity."</p>
		When did your company first recognize solar PV as a viable renewable energy choice?	<p>Two of representative from the companies (interviewees) answer: "Since eight years ago, if calculate in 2023" "Since three years ago, if calculate in 2023"</p> <p>Three of representative from the companies (interviewees) answer: "We became aware starting in 2020, during the COVID-19 pandemic, when the government began promoting renewable energy."</p>
		What is your company's policy as a Regional Electricity Supply Business Entity regarding solar PV installations for your tenants?	<p>All of the representative (interviewees) answers: "All our interviewees mentioned that we comply with government regulations and currently permit tenant companies to install solar PV systems, provided their capacity does not exceed 15% of the total capacity used. This cautious approach is due to concerns about potential impacts on our on-grid system. We are apprehensive that any issues could affect all our tenants and lead to protests directed at us."</p>
		Are tenant companies allowed to utilize solar PV?	<p>Most of the representative (interviewees) answers: "According to our regulations, both On-Grid and Off-Grid systems still need our approval; we have not granted exemptions yet because it concerns the electrical network that we own and provide to them." Another representative from the company (interviewer) answer:</p>



"Tenant companies must still seek our approval for installations, with their capacity restricted to 15% - 20% (depending on the agreement) of the total capacity used. For On-Grid installations, our technicians will monitor the system. However, for Off-Grid installations, the responsibility lies with the tenants."

2	<p>Problem Recognition</p> <ul style="list-style-type: none"> Internal Factors (sustainability objectives, budget limitations, risk mitigation) External Factors (regulatory shifts, market trends, industry standards, customer expectations) 	<p>What key factors do you take into account when considering the installation of a solar PV system for your business?</p>	<p>Four of representative (interviewees) answer: "We are beginning to contemplate the adoption and installation of solar PV for renewable energy, prompted by government regulations recommending the use of renewable energy in the electric power supply business area or 'Wilayah Usaha'. Additionally, our company is facing pressure from tenants to adopt renewable energy as a condition for their cooperation or supplier agreements." Another representative from the companies (interviewees) answer: "We have been using renewable energy for a quite some time now, as we are quite environmentally aware. We also have our power plant, so we have been involved in renewable energy for about 4 years now"</p>
		<p>What initial factors are important for tenants when considering installing a solar PV system for their business? (for tenant company)</p>	<p>Most the representative from the companies (interviewees) answers: "The regulations align with the policies of our company/parent company (Regional Electricity Supply Business Entity), as we are ultimately responsible for selecting the solar PV developers." Other representative from the companies (interviewees) answers: "We permit exceptions based on their policies and considerations, provided they obtain permission from us and do not disrupt our main electrical system."</p>
3	<p>Information Search</p> <ul style="list-style-type: none"> Personal Connections (e.g., business partners, friends, family) Commercial (e.g., Ads) Public Sources (e.g., testimonials, success stories) Experiential (e.g., based on personal experience) 	<p>Will you evaluate relevant information before adopting Solar PV services? If yes, where do you typically seek this information?</p>	<p>All of the representative from the companies (interviewees) answer: "Yes, we typically gather information about solar PV from business partners or colleagues with connections to solar PV developer companies. Additionally, we tend to align with our parent company's approach to adopting solar PV. Another factor we consider is the company's portfolio."</p>
4	<p>Evaluation of Alternatives</p> <ul style="list-style-type: none"> Product Price 	<p>When evaluating multiple alternatives, what factors will you consider</p>	<p>All the representative from the companies (interviewees) answers:</p>



	<ul style="list-style-type: none"> • Place • Promotion 	<p>regarding the product/service, price, location, and promotion?</p>	<p>"We prioritize price as the primary factor among various options because it directly impacts cost efficiency, aligns with budget constraints, enhances competitiveness, adds perceived value, and aids in negotiations. Additionally, promotion is crucial as discounts or offers that reduce prices can influence our purchasing decisions."</p>
		<p>Are tenant companies permitted to suggest the solar PV system they prefer?</p>	<p>Third of representative (interviewees) answers: "Yes, it depends on the choices and decision of each tenant." Two employee of representative interviews answer: "No, because the policy for solar PV installation has already been prepared by us."</p>
<p>4</p>	<p>Purchase Decision</p> <ul style="list-style-type: none"> • Planned Purchase • Impulsive Purchase 	<p>Decision Rule & Hierarchy of Effect</p> <p>How do you prioritize and exclude products or services during your decision-making process for selecting solar PV solutions?</p>	<p>Most of interviewee's answers: "We utilize a strategic decision-making process to prioritize and assess solar PV solutions, involving needs assessment, cost-benefit analysis, risk assessment, stakeholder input, product evaluation, and market research. The decision to adopt solar PV is intricate and critical for the continuity of our business operations and the satisfaction of our tenants. Price is particularly crucial, as ideally, solar PV should offer greater cost efficiency compared to traditional electricity." Another interview answer: "We select a solar PV company based on the preferences of our top management. At times, qualifications may not be closely scrutinized as long as they meet the standards set by the Indonesian government."</p>

Source: Primary Data Processed, 2024

B. Discussion

Based on the interview question and answer above, it can be concluded that:

1. Preliminary Question

Most interviewees cited reasons for not adopting solar PV renewable energy, including proximity to a cement factory, the need for continuous 24-hour electricity support, and insufficient knowledge about solar PV installation. According to their feedback, promotional efforts from solar PV developer companies are necessary alongside existing solutions. For instance, continuous electricity can still be ensured through battery storage, and locations near cement factories can leverage solar PV with increased maintenance intervals.

2. Problem Recognition

Most respondents indicated that they rely on **External Stimuli** to recognize problems. They begin to act and recognize the need to transition to renewable energy, particularly solar PV, due to government regulations and pressure from tenants (customer demand) regarding industry standards. Only one representative mentioned using **Internal Stimuli**, having already recognized the importance of sustainability goals.

3. Information Search

All information searches are primarily **Personal**, as companies typically consult with business partners or acquaintances of their leaders when considering the adoption of solar PV. Only one interviewee mentioned relying on **Public Sources** (such as testimonial success stories) that influence decision-making.



4. Evaluation of Alternatives

Interviews with company representatives reveal that the primary consideration when selecting solar PV is **Price**, as it directly impacts their business operations; the lower the cost, the more likely they are to adopt solar PV. Additionally, interviews indicate concerns about the installation process. There is skepticism about whether this technology can fully replace conventional electricity, and confusion persists regarding suitable installation locations. Some believe that solar PV requires significant land or a sturdy roof, prompting concerns that weak roofs may need replacement upon installation discovery.

5. Purchase Decision

Decision Rule & Hierarchy Effect

Most respondents indicated they employ the **Elimination-by-Aspect Rule** when selecting a solar PV developer company, swiftly discarding options if the price surpasses that of bulk or traditional electricity. They approach choosing a solar PV company with a **Low-Involvement Hierarchy**: Cognition (minor) to Behavior to Affect.

Cognition involves the consumer's beliefs about an attitude object, particularly focusing on the affordability or lower cost compared to their current electricity expenses. Consumers then make purchases based on broad associations and limited beliefs, prioritizing affordability. It's only after engaging with the service that consumers attempt to evaluate their satisfaction with it. This is akin to one respondent following a Compensatory Rule, where they rely on their leader's choice before making a decision.

Planned vs Impulsive

All interviewees stated that they carefully **Planned** their decision-making process for installing solar PV. This decision is significant and requires involvement from multiple parties. Therefore, meetings with leaders and various relevant departments within the client company are essential.

CONCLUSION

Companies face barriers to adopting solar PV renewable energy, such as being located near industrial sites like cement factories, requiring uninterrupted 24-hour electricity, and lacking familiarity with solar PV installation processes. Interviews reveal that companies predominantly rely on external stimuli, such as government regulations and customer demand, to recognize the need for renewable energy. Information gathering is primarily done through personal networks in leader choice, while price remains the most significant factor in evaluating alternatives. Trust issues and confusion regarding installation further complicate the decision-making process. Most companies use the Elimination-by-Aspect Rule, focusing on price, and exhibit low-involvement decision-making behavior. Decisions are planned, involving multiple parties, and requiring thorough internal discussions. For solar PV adoption to increase, companies need effective promotional techniques and education from developers to address these barriers and misconceptions.

Additionally, a Heuristic Decision rule is employed when consumers seek the services. They consider tend to choose familiar brands without comparing alternatives, which options for the first acceptable choice rather than seeking the optimal one, it is based on personal in leader choice, while price remains significant factor in evaluating alternatives, which reflect a low-involved hierarchy. Based on several conclusion above, there are several recommendations for PT. XYZ:

- To enhance the adoption of solar PV renewable energy among companies, a multifaceted approach is needed: Targeted Educational Campaigns: Solar PV developers should implement comprehensive educational campaigns to address knowledge gaps about solar PV installation, benefits, and maintenance. These campaigns could include webinars, workshops, and informational materials tailored to specific industries, emphasizing how solar PV can be integrated effectively even in challenging environments, such as near cement factories.
- Customized Solutions for Continuous Power Needs: Developers should promote and offer customized solutions that ensure continuous 24-hour electricity supply, such as advanced battery storage systems. Highlighting successful case studies where such solutions have been implemented can build trust and demonstrate reliability.
- Strengthening Personal Networks and Testimonials: Given that companies rely heavily on personal networks and testimonials, developers should leverage satisfied clients to provide testimonials and referrals. Creating a robust network of advocates who can share their positive experiences can significantly influence potential adopters.
- Transparent Pricing Models: Since price is the most critical factor, developers should offer transparent and competitive pricing models. Providing detailed cost-benefit analyses and long-term savings projections can help companies see the financial advantages of adopting solar PV over traditional electricity sources.



- Building Trust through Demonstrations and Pilot Projects: To overcome trust issues, developers should offer demonstrations and pilot projects. These initiatives can allow companies to experience the technology first-hand and understand its practical benefits and feasibility without committing to a full-scale installation immediately.
- Collaborative Decision-Making Support: Recognizing that the decision-making process involves multiple stakeholders, developers should provide support tools and resources that facilitate these internal discussions. This could include decision-making frameworks, ROI calculators, and interactive proposal presentations that align with the company's operational and financial goals.
- Addressing Installation Concerns: Developers should provide clear guidelines and solutions for installation-related issues, such as space requirements and roof strength. Offering preliminary site assessments and consultations can help companies understand the necessary preparations and modifications needed for a successful installation. by market research.

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Cite this Article: Fita Handasati, Mustika Sufiati Purwanegara (2024). The Decision-Making Journey of How-to Making Cooperation with Solar PV Developer Company to Install Solar PV in Indonesia: A Qualitative Study. International Journal of Current Science Research and Review, 7(6), 4004-4011