



GREEN BUILDING MARKET STAKEHOLDER ASSESSMENT

INDONESIA
2023



Creating Markets, Creating Opportunities

ACKNOWLEDGEMENT

This report was prepared as part of the UK-IFC Market Accelerator for Green Construction (MAGC) Research Program. The preparation of this assessment was based on 187 surveys of Indonesian private sector companies including developers, real estate practitioners (i.e., brokers, real estate agents, and/or property managers), financial institutions, building experts (i.e., architects, engineers, contractors, and Green Building experts), policy makers, commercial occupiers, and residential occupiers (i.e., tenants and homeowners). Substantive contributions were received from Farida Adji, Yanu Aryani, and Anggita Sari of IFC's Indonesia EDGE team. A special thank you is extended to Corinne Figueredo, IFC EDGE Operations Manager, who provided guidance for the study.

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GREEN BUILDING MARKET STAKEHOLDER ASSESSMENT: INDONESIA

Buildings account for one-third of global final energy use and one-fifth of energy-related greenhouse gas (GHG) emissions. Green Buildings can be a solution to reduce energy use and GHG emissions of buildings and contribute to low carbon economic growth. However, market failures and barriers (e.g., lack of supportive policies, information asymmetry between builders and buyers regarding the efficiency of a building, and lack of information about, experience with, and awareness of Green Buildings) result in the continuation of conventional approaches to constructing buildings.

The UK-IFC Market Accelerator for Green Construction (MAGC) aims to boost the uptake of greener construction practices and technologies in developing countries. As part of this initiative, the MAGC Research program gathers, analyzes, and disseminates new evidence to develop, improve, and promote approaches to green construction and market transformation.

The scope of MAGC Research includes a series of stakeholder assessments intended to understand the perceived motivations and obstacles to the growth of Green Buildings in selected emerging markets.

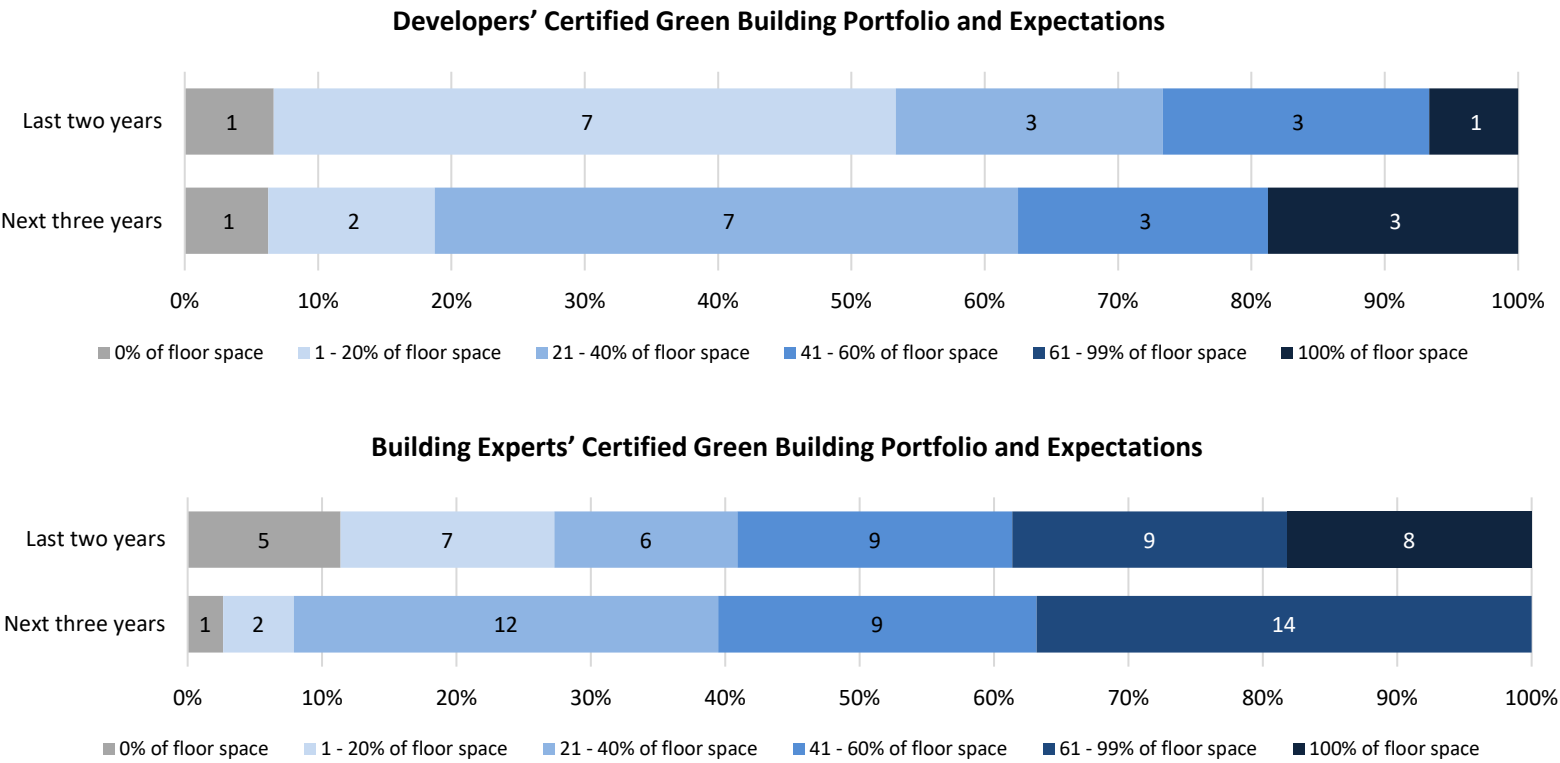
This report was conducted as part of the MAGC Research Program in 2022-2023. The stakeholder assessment is intended to be representative, but not exhaustive. It aims to provide actionable insights and contribute to the understanding of the Green Building market in Indonesia, shedding light on awareness, motivating factors, perceived obstacles, construction cost and performance estimates, and decision-making paradigms of each stakeholder group.

The Indonesia stakeholder assessment was conducted through the SurveyMonkey online survey platform. 187 stakeholders responded to the survey, representing eight stakeholder groups: developers, real estate practitioners (i.e., brokers, real estate agents, and/or property managers), financial institutions, building experts (i.e., architects, engineers, contractors, and Green Building experts), policy makers, commercial occupiers, and residential occupiers (i.e., tenants and homeowners).

GREEN BUILDING MARKET STAKEHOLDER ASSESSMENT: INDONESIA

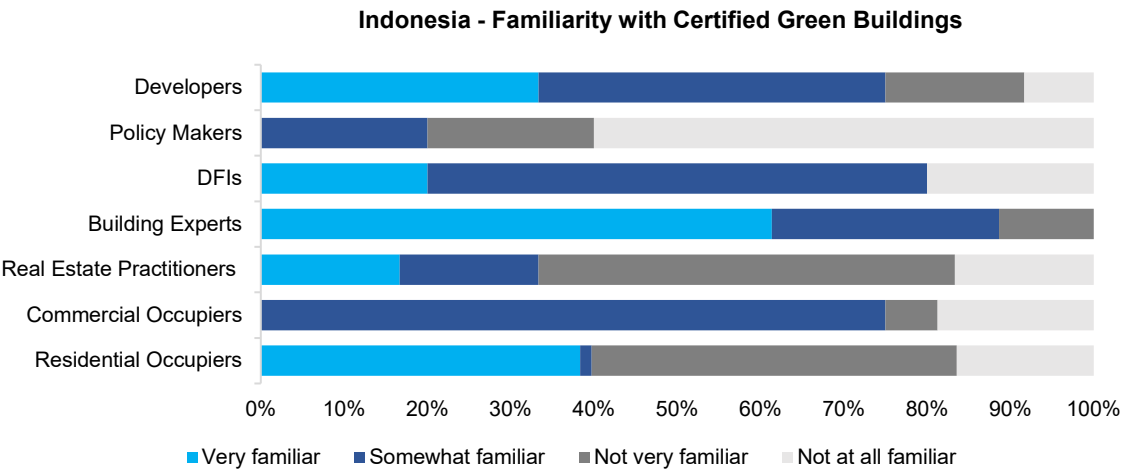
Portfolio: This assessment finds that Indonesia has a growing Green Building market, with the majority of developers and building experts reporting having Green Building portfolios during the last two years. The report also suggests that Indonesia’s Green Building market has momentum, with many developers and building experts reporting an expected increase in their Green Building portfolios.

These findings are aligned with the IFC’s Green Building Market Maturity Snapshot for Indonesia*, which indicates that the Green Building penetration rate -the share of certified buildings among new builds- has increased over the last few years.



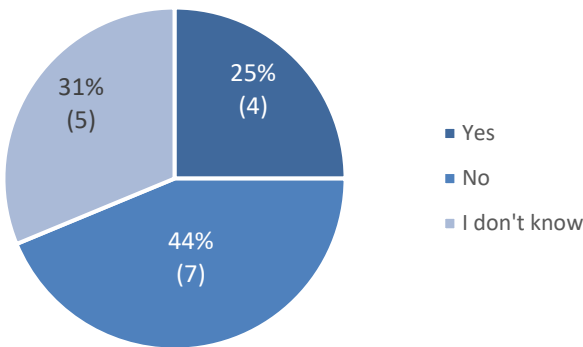
GREEN BUILDING MARKET STAKEHOLDER ASSESSMENT: INDONESIA

Familiarity: Overall, 60% total of respondents indicated that they are somewhat familiar or very familiar with Green Buildings, indicating limited awareness among stakeholders in Indonesia. Building Experts (89%) and DFIs (80%) were identified as groups most familiar with certified Green Buildings, followed by developers (75%) and commercial occupiers (80%). Conversely, policy makers (20%) and real estate practitioners (34%) reported the least familiarity with Green Buildings.

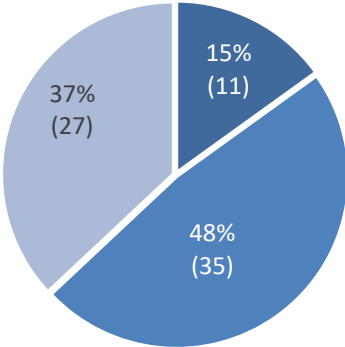


Demand: 25% (4) of the commercial occupiers and 15% (11) of residential occupiers reported to be working or living in a Green Building. However, 16% (9) of residential occupiers indicated that they would be willing to pay an additional 2% to live in a resource and energy efficient Green Building, indicating robust demand for Green Buildings. These findings suggest that Indonesia's Green Building market has a large growth potential.

Commercial Occupiers:
Does Your Company Occupy a Certified Green Building?



Residential Occupiers :
Do You Live in a Certified Green Building?

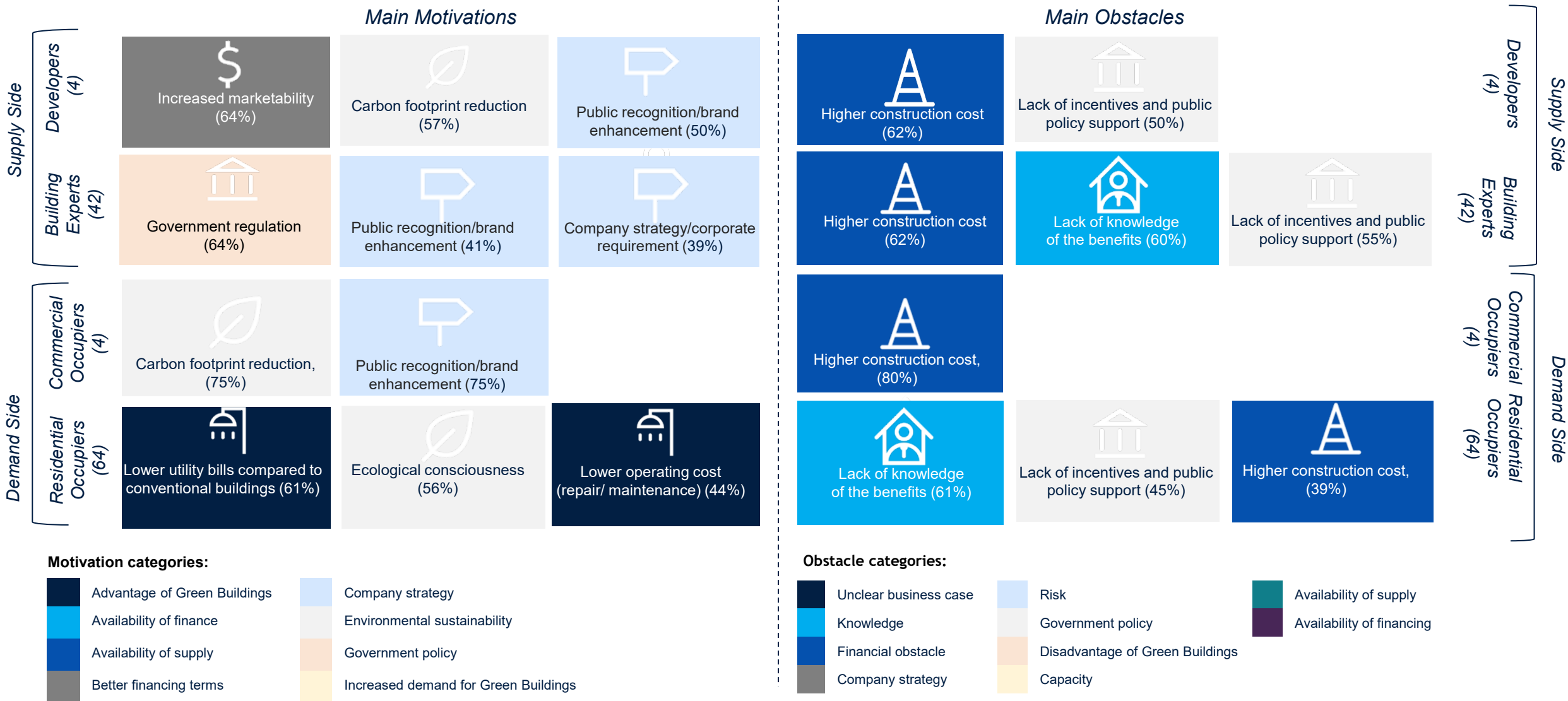


Motivations: There is heterogeneity among respondents vary, but a common motivation identified by respondents is public recognition and brand enhancement, particularly on the supply side and among commercial occupiers.

On the supply side, according to the survey the main motivating factors for Green Buildings are their increased marketability (64% of developers), and public recognition and brand enhancements (50% of developers and 41% of building experts).

On the demand side, occupiers indicated that the main motivating factors for buying or leasing a Green Building are lower utility bills (76% of residential occupiers) and carbon footprint reduction (75% of commercial occupiers).

GREEN BUILDING MARKET STAKEHOLDER ASSESSMENT: INDONESIA



GREEN BUILDING MARKET STAKEHOLDER ASSESSMENT: INDONESIA

Obstacles: On the supply side, survey results indicate that the perceived cost of construction is considered the major obstacle to the expansion of certified Green Buildings in Indonesia (62% of developers and 62% of Green Building experts), followed by the lack of incentives and public policy support (55% of Building Experts, 50% of developers).

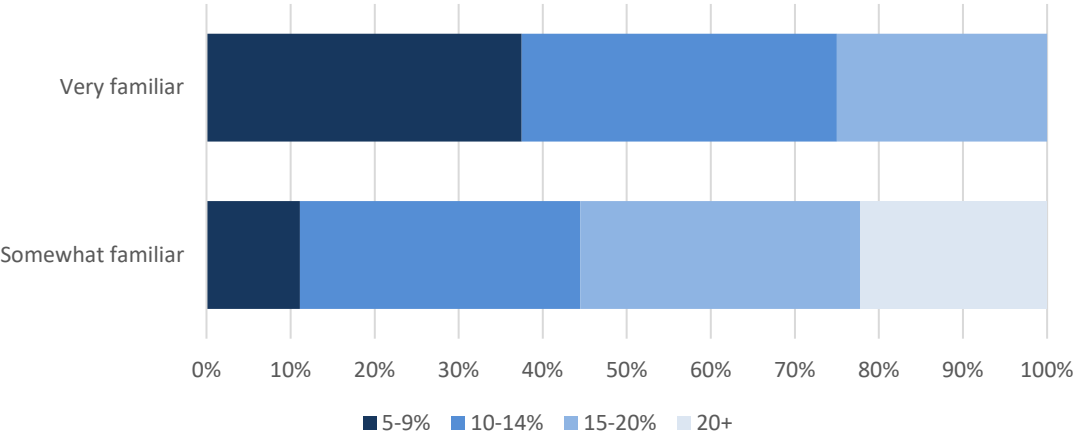
On the demand side, the main reported obstacle is also the perceived cost of construction (80% of commercial occupiers and 38% of residential occupiers), together with the lack of knowledge of the benefits (61% of residential occupiers).

It is worth noting that 100% of the building experts in the survey estimated that the cost of construction is an additional 5% or more for certified Green Buildings, which is much higher than the typical actual estimated additional cost of 1-2%.

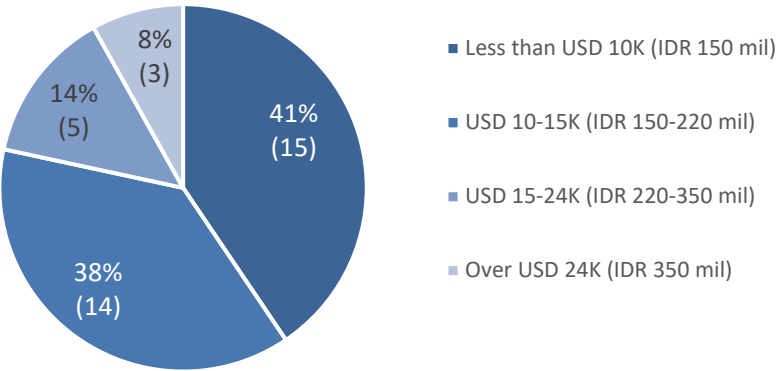
However, estimations of the additional cost of construction appear to decrease with the level of familiarity with Green Buildings. While this could mean that better knowledge may allow companies to find more cost-effective solutions, it could also signal that in the absence of information, developers that are less familiar with certified Green Buildings could further overestimate the additional cost of green construction.

Regarding the cost of certification, the estimation of the professional fees required to certify a 5,000 sqm project varied significantly across Building Experts respondents, again suggesting a large knowledge gap.

Building Experts' Estimation for the Additional Cost of Construction of a Certified Green Building by Level of Familiarity with Certified Green Buildings



Building Experts' Estimation of Professional Fees to Certify 5,000 sqm Project



GREEN BUILDING MARKET STAKEHOLDER ASSESSMENT: INDONESIA

Conclusion:

- The importance of Green Buildings in Indonesia is expected to grow for all stakeholders.
- 61% of residential occupier respondents in Indonesia said that they would be willing to pay an additional 2% or more to live in a Green Building, with 48% of respondents willing to pay over 3%, which would cover the typical actual estimated additional cost of Green Building construction of 1-2%. In addition, building experts in Indonesia consider government regulation as one of the main motivating factors for Green Building construction. All this suggests that the business case for increased Green Building construction in Indonesia is strong.
- 61% of residential occupier respondents and 60% of surveyed building experts in Indonesia cited the lack of knowledge of the benefits of certified Green Buildings as an obstacle for the development of the market, and 62% of surveyed building experts in Indonesia consider the additional perceived cost of Green Building construction as the main barrier. However, the findings suggest that this latter cost is substantially overestimated, particularly by stakeholders less familiar with Green Buildings. All this suggests that the information gap regarding the cost of Green Building construction in Indonesia is still very large, and that further knowledge dissemination efforts are needed to reduce it.

ANNEX

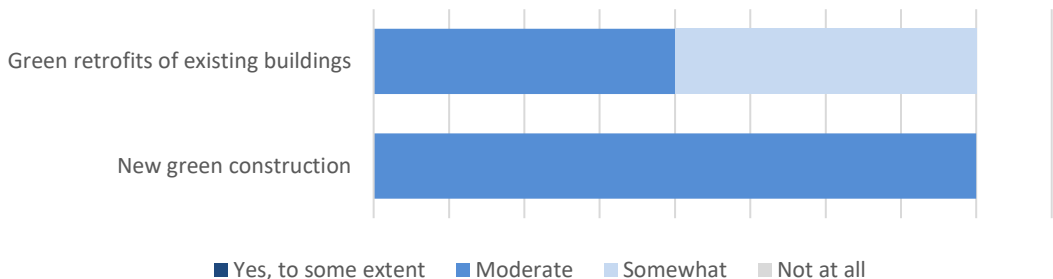


Policy Makers

Responses: 5

All policy makers surveyed consider that Green Building development is an important part of Indonesia's response to climate change, with 80% indicating it is very important, and the remaining 20% saying it is important. The survey gathered views whether current public policies (e.g., regulations, incentives) encourage the development of the certified Green Building market in Indonesia.

Do current policies encourage development of the GB market?



Despite the consensus that public policies encourage the development of the Green Building market (100% of respondents considering that public policies are at least somewhat encouraging), the enforcement of these policies appears to be lacking. 60% of the respondents estimated that there is limited or no enforcement of Green Building regulations in Indonesia.

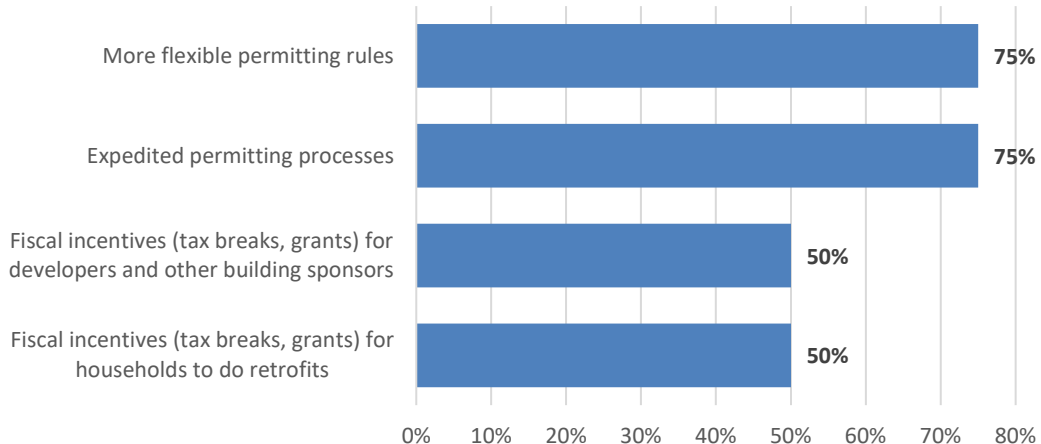
All respondents consider voluntary Green Building certification to play a factor. Half of policy makers believe that fiscal incentives for certified Green Buildings (tax breaks, grants), national green building code, and Nationally Determined Contributions (NDCs) mentioning the role of the Green Building sector are the top accelerants in the certified Green Building market.

Public policy actions as accelerants in the certified Green Building market



Half of policy makers estimated that Nationally Determined Contributions (NDCs) mentioning the role of the Green Building sector, National Green Building code, and fiscal incentives for developers and other building sponsors were useful public policy incentives (50% each). Primary incentives that policy makers believe would accelerate the certified Green Building market are presented below.

Primary incentives for Green Building market acceleration



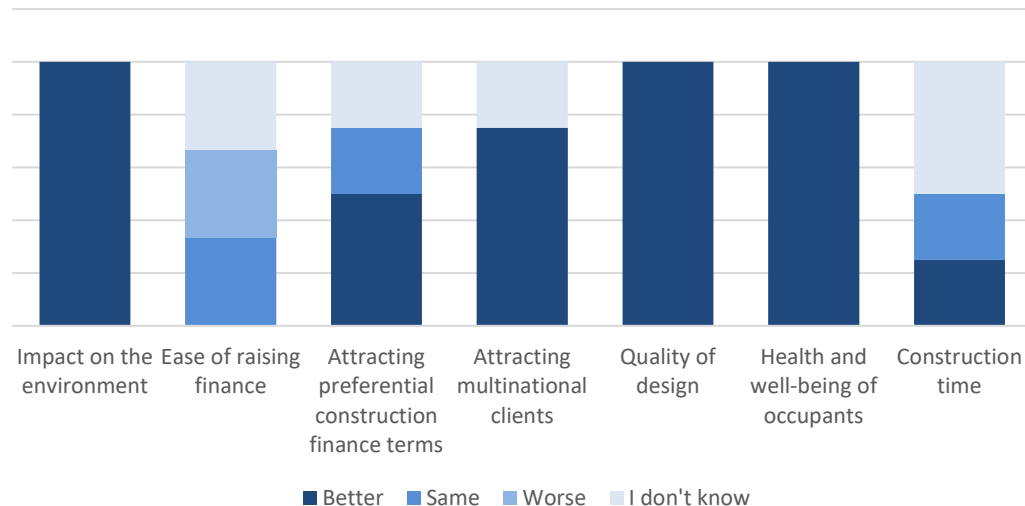


Policy Makers

Responses: 5

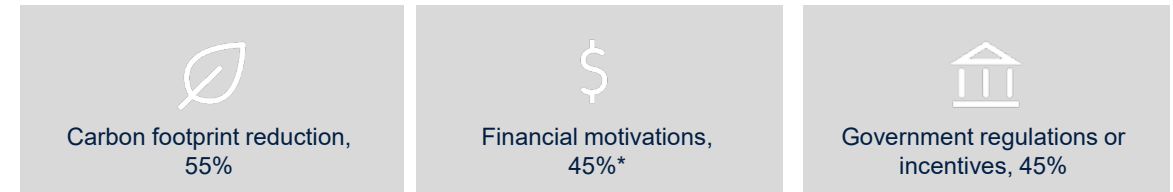
Almost all policy makers (91%) surveyed believe that certified Green Buildings always perform better than conventional buildings in terms of impact on the environment and that certified Green Buildings have a better impact on the health and well-being of occupants (82%). Policy makers' views on other performance indicators are shown in the graph below. Based on the survey results, it is interesting to note that up to 50% of the policy makers do not know how conventional buildings perform compared to certified Green Buildings in response to specific questions.

Performance Indicators of Certified Green Buildings vs Conventional Buildings



When asked, what do policy makers believe were motivators and obstacles for the development or investment of certified Green Buildings, 55% of policy makers indicated that a reduced carbon footprint was the main motivator; while 55% indicated that a lack of incentives and public policy support, as well as higher certification cost, were the main obstacles to developing Indonesia's certified Green Building market.

Main motivators in developing the certified Green Building market



Main obstacles in developing the certified Green Building market



*Financial Motivations include better construction/mortgage terms and increased access to financing/profitability.



Development Finance Institutions

Responses: 5

Development finance institutions (DFIs) were comprised of multilateral, bilateral, or national development institutions or subsidiaries set up to support development in Indonesia. Only one of the four DFIs surveyed indicated that their institution supports the development of the Green Building market in Indonesia by providing financing to developers. Furthermore, this institution does not require any Green Building certification as a prerequisite to obtaining financing. Only one of the DFIs not supporting the development of the Green Building market at present time plans to provide support in the future.

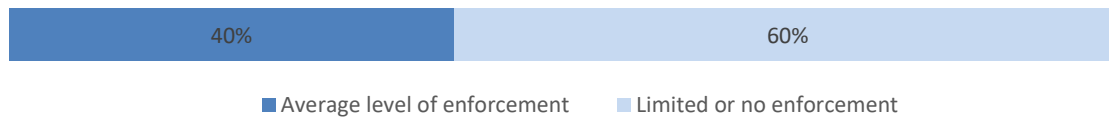
4 out of 5 DFIs surveyed indicated that the construction of Green Buildings was very important or important in addressing climate change. Regarding Green Building familiarity, four DFIs indicated that they were very or somewhat familiar, while the two indicated that they were not familiar with certified Green Buildings. From an enforcement perspective, two DFI seemed positive that Indonesia has a good level of enforcing Green Building regulations, while the remaining three stated that there was limited to no enforcement.

DFI respondents are of the opinion that increased investor demand, increased access to financing, government regulations, and increased marketability are major factors currently supporting the development of the certified Green Building market.

The main obstacles highlighted by the respondents included the lack of technical capacity within the construction and/or finance sectors, the fact that the benefits of certified Green Buildings are not clear and the lack of adequate construction materials. DFI stakeholders believe that real estate developers, institutional investors, and financial institutions are the most influential stakeholders when it comes to developing the Green Building market in Indonesia.

Key actions that DFIs believe would increase the uptake of certified Green Buildings in Indonesia are incentives (both financial and non-financial) and mandatory Green Building certification.

Perceived Enforcement of Green Building Regulations in Indonesia





Financial Institutions

Responses: 7

FIs survey targeted a relatively small group of stakeholders that provide mortgage and construction loans in Indonesia. A vast majority of FIs (6 out of 7) that were surveyed raised a high level of concern given the potential climate risk in their real estate portfolios. Two FIs indicated that transition risk (e.g., public policy, market preferences, norms, and technology) was a major risk, while another two FIs indicated that they were more concerned about the physical risk (drought, flood, or other changes in climate). One FI indicated that both transaction and physical risks were considered major risks to their institution. Currently, five out of seven banks responded that they provide financing for Green Building projects. All five banks require green certification to approve a Green Building loan.

Four of the FIs predict that the highest Green Building finance growth potential is likely to take place within Green Building construction finance (residential and commercial) and not within the repurposing and retrofits of existing buildings into Green Buildings. One FI predicts green mortgages to have highest Green Building finance growth potential.

Five FIs responded that their loan portfolios for certified Green Buildings are expected to increase in the next three years, ranging from three to 50%. FIs have implemented, inter alia, the creation of a definition for Green Building projects, a Green Building Finance and Asset Policy, a dedicated marketing and outreach strategy for developers and property buyers and a partnership with an internationally recognized Green Building certification system.

To date, the most important factors in the increase of certified Green Buildings include government regulations and increase in investor demand. All seven FIs consider national government to be the most influential stakeholder in the development of the Green Building market in Indonesia. The majority of respondents also consider developers and local governments to be highly influential.

Three out of five FIs indicated that the lack of incentives and public policy support, the lack of a certification system adapted to our needs, and inefficient supply of certified Green Buildings are the main three obstacles to increasing the financing in Green Buildings.



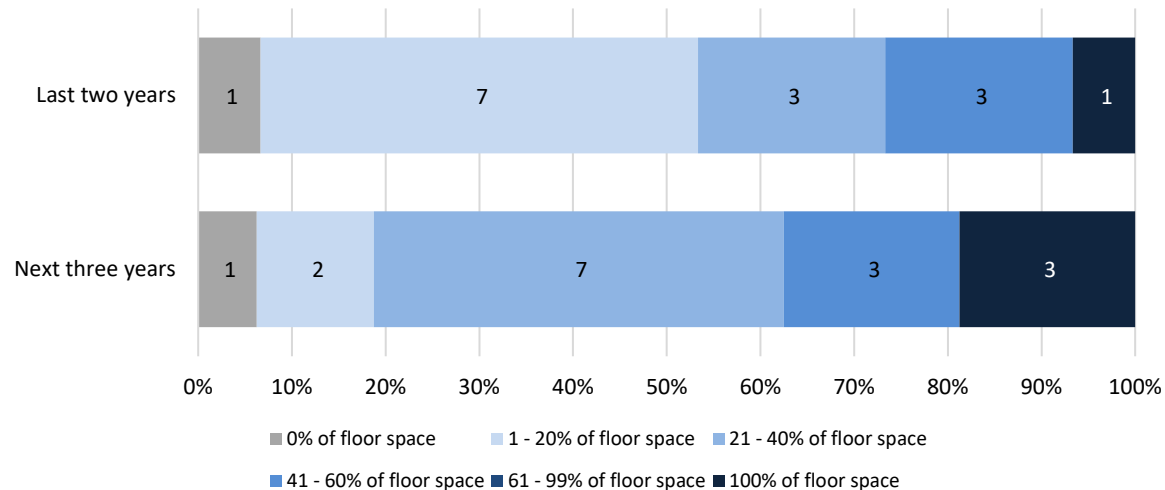
Developers

Responses: 20

Based on the 20 survey responses the study collected, 75% of developers consider themselves to be either very familiar (33%) or somewhat familiar (42%) with Green Buildings. 94% of developers stated that they currently have certified Green Buildings in their portfolios.

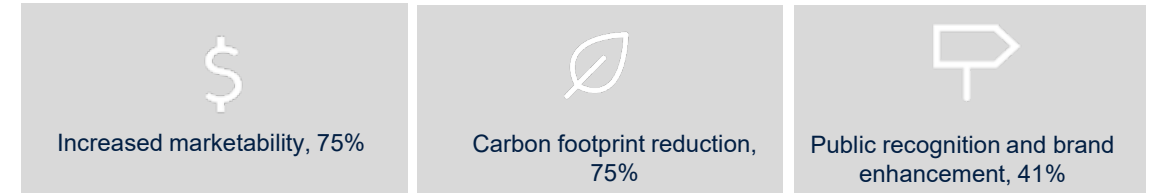
Based on the developers' answers, an increasing trend emerges with developers intending to increase their share of certified Green Buildings in their portfolios. A breakdown of the developers' portfolio existing and future expectations are provided below.

Developers' Certified Green Building Portfolio and Expectations



Existing and future trends indicate that offices (55%), retail (50%), hotels (40%), and high-income residential (40%) are the most popular in terms of certified Green Building developments. The anticipated increase in green certified floor space is predominantly driven by the increased marketability, carbon footprint reduction, and public recognition and brand enhancement,

Main motivations to certify green

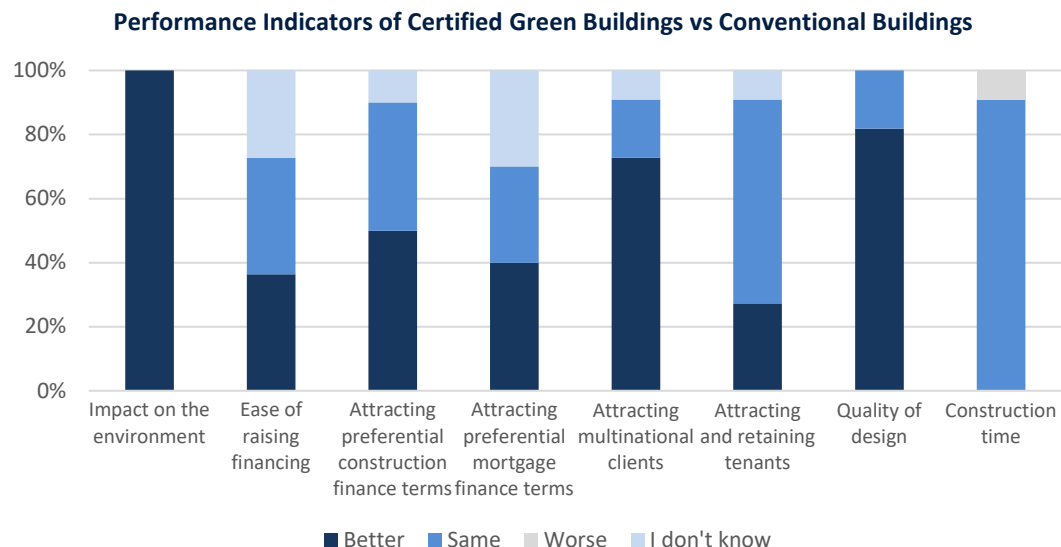


Most developers feel that the high(er) construction cost (64%), and lack of incentives and public support (57%) are the main obstacles to increasing the share of certified Green Buildings in their development portfolios.

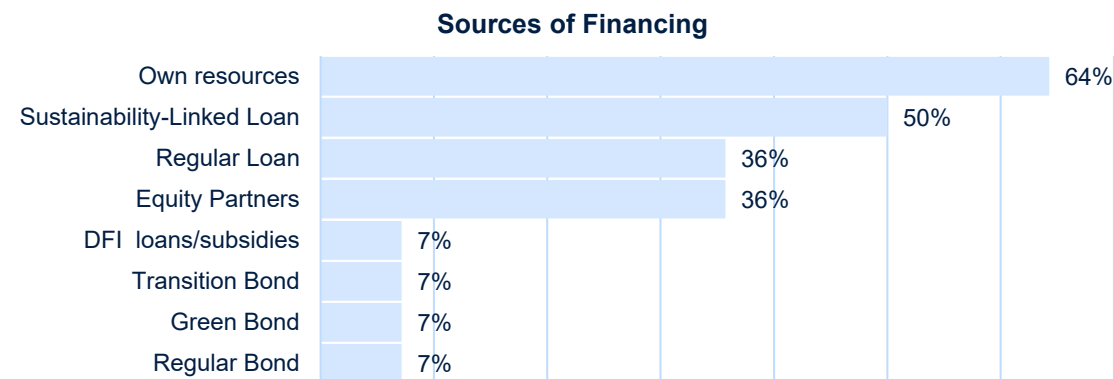
Main obstacles to certify green



The majority of developers (70%) responded that certified Green Buildings cost more to develop than conventional buildings. Of these, 40% estimate that it will cost between 3-4% more, while 30% estimate that it will cost between 10% or more to develop a certified Green Building vs. a conventional building. In general, developers tend to perceive that certified Green Buildings are equal or higher than conventional buildings with regards to property value (100%) and rental price (100%). Apart from a perceived higher construction cost, 67% of developers also perceive certified Green Buildings to have same occupancy rates (78%) or higher (22%) than conventional buildings. Operation costs (71% of respondents) and utility bills (86%) are estimated to be lower. Developers are, however, of the opinion that certified Green Buildings do perform better in terms of the buildings' impact on the environment (100%), quality of design (82%) and attracting multinational clients (73%).



Most developers use their own resources (64%) followed by sustainability-linked loans (50%), equity partners (34%), and regular and equity loans (36% each) to finance their developments.



Only 38% of developers think that current regulations at least moderately facilitate the development of the Green Building market. The majority (67%) of developers indicated that the enforcement of Green Building regulations in Indonesia is average, the rest estimated that there is limited to no enforcement.

Regarding actions to further develop the Green Building market in Indonesia, developers are of the opinion that fiscal incentives (e.g., tax breaks, grants) (67%), mandatory Green Building certifications for new buildings (58%), national Green Building Code (58%), requirement for public buildings to be certified Green Buildings (33%), carbon tax on conventional buildings (or other market-based mechanisms to reduce emissions) (33%), and government advocacy for Green Building certification (33%) are needed to support the development of the certified Green Building market in Indonesia.



Building Experts

Responses: 54

Feedback from designers and consultants indicates that the main obstacles to greater growth in the certified Green Building market included the high cost of construction (60%), a lack of knowledge of the benefits of certified Green Buildings (52%), and lack of demand from end-users (48%). Conversely, the primary motivations for developing certified Green Buildings included increased marketability (45%), public recognition and brand enhancement (45%) and sales speed (45%).

Main obstacles in developing the certified Green Building market



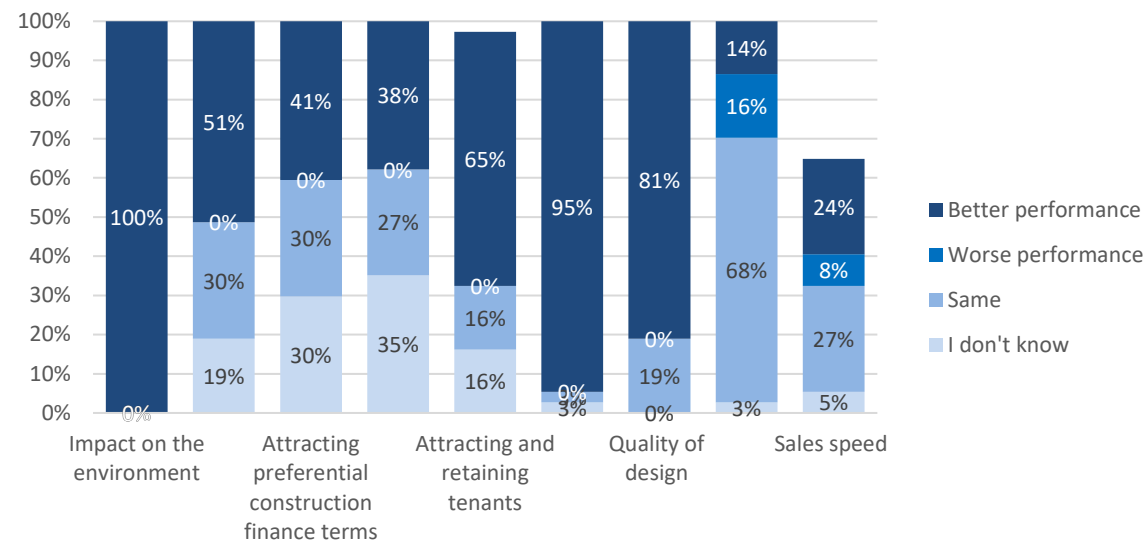
Main motivators in developing the certified Green Building market



Certified Green Buildings are expected to perform better than conventional buildings in terms of impact on the environment and attracting multinational clients. Furthermore, the surveyed stakeholders estimated that certified Green Buildings perform better in all other categories except for construction time and sales speed.

Regarding the cost of construction, 30% of stakeholders familiar with certified Green Buildings estimated that the construction cost of a certified Green Building ranges between 5-9% more, while 27% estimated that the construction cost to be additional 1-9% and 10-20% each. Furthermore, 17% of the stakeholders familiar with certified Green Buildings estimated the construction cost to be more than 15%. Regarding utility cost, half (48%) of stakeholders familiar with certified Green Buildings estimated the cost of utility bills to be between 3-9% less, while 41% of the stakeholders the cost of utility bills to be between 10-20% less.

Certified Green Buildings vs Conventional Buildings



56% of building experts estimated predicted the actual savings (accrued or realized) by a certified Green Building, as compared to predicted savings, to be higher. Further 22% thought savings are lower and 20% thought savings are the same.

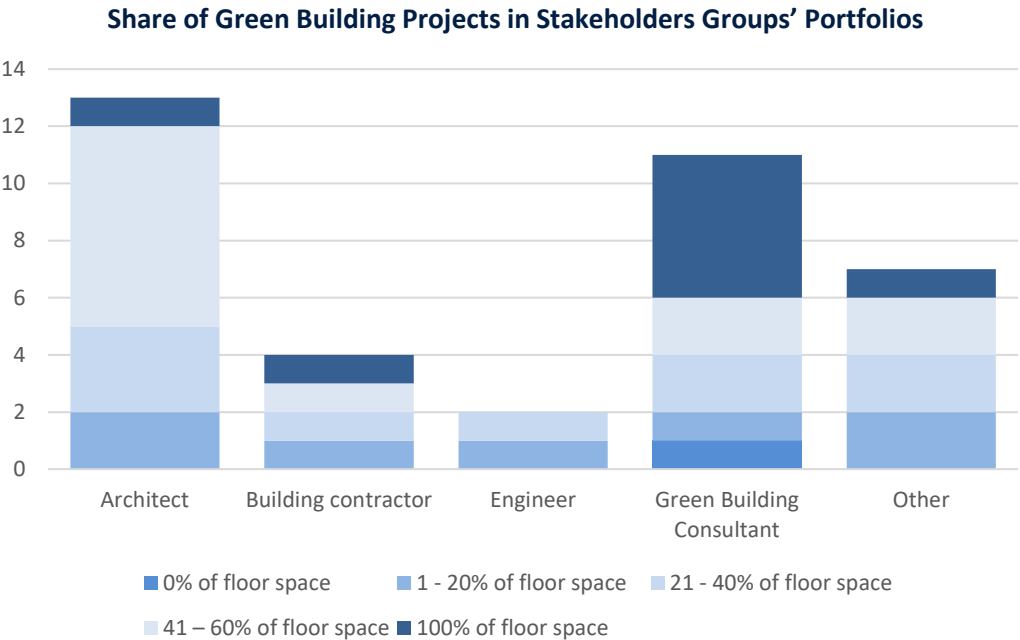


Building Experts

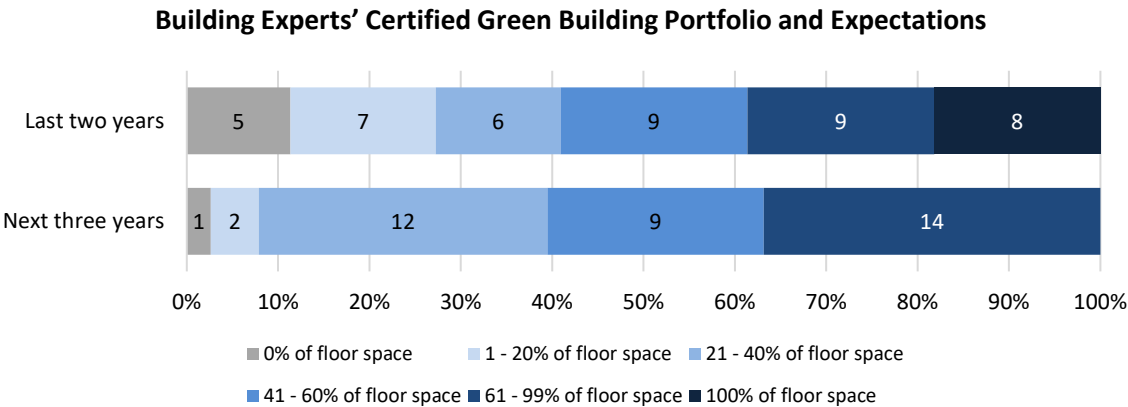
Responses: 54

Green Building familiarity among designers and Green Building consultants is strong. A vast majority of building experts (89%) are either very familiar (61%) or somewhat familiar (27%) with green buildings.

The graph below illustrates the proportion of self-declared Green Building projects in each stakeholder group portfolio over the last two years. 38% of Green Building consultants claim that 100% of their portfolios consist of Green Buildings. 59% of architects indicated that Green Buildings take up between 41-60% of their project's floor space.

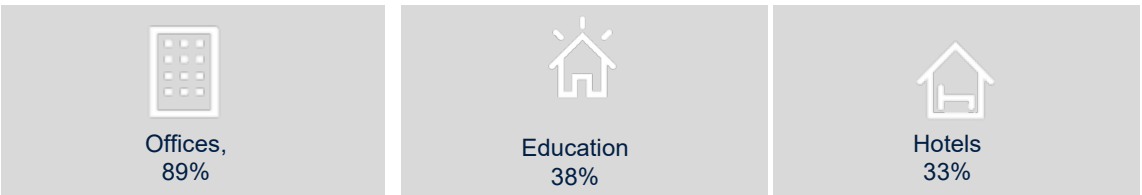


The graph below summarizes the certified Green Building floor space in the current portfolios of designers and Green Building consultants and their projected increase in in the next three years.



Respondents indicated that they use Greenship certification most widely (65%), followed by EDGE (33%). Stakeholders indicated that their decision regarding which certification system to use was largely guided by the type of building to be certified (68%) followed by the reputation of the certification system (56%) and the cost of certification (49%). The three most popular property segments to develop and certify green for designers and Green Building consultants include hotels, offices, and high-income residential.

Main real estate sectors for certified Green Building development



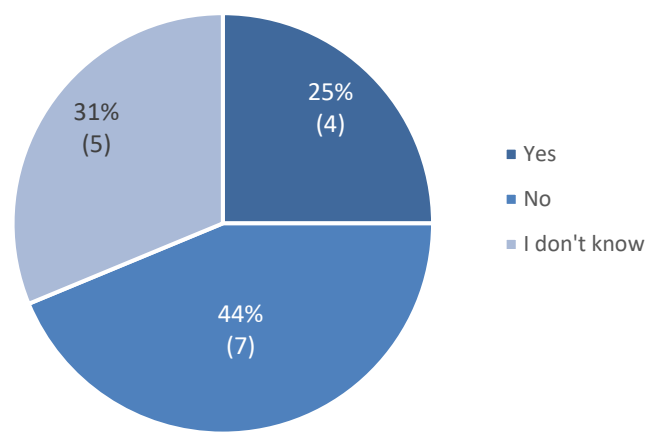


Commercial Occupiers

Responses: 16

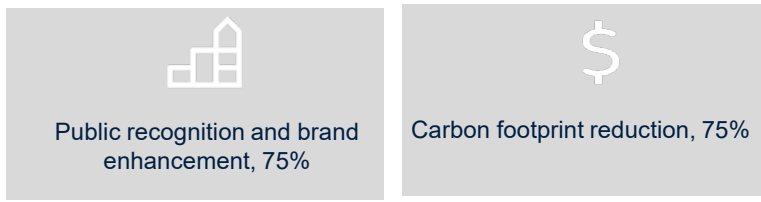
The commercial occupiers stakeholder group consisted of businesses or companies active in the following sectors: offices, retail, warehouses, and light industry that either rent or own a building/space in Indonesia. The survey results revealed that the majority (69%) rent the floor space they use while 31% of businesses own the floor space they use. Of the stakeholders surveyed, 69% of commercial occupiers own or rent floor space <1,000 sqm. One of the key questions in the survey asked stakeholders to rate their company's sustainability agenda - 62% of stakeholders indicated that their company has a medium or advanced sustainability agenda, and that sustainability was a significant focus of their firm. The majority (75%) of the respondents indicated that they were somewhat familiar with certified Green Buildings. 25% of commercial occupiers stated that they occupied a certified green building, while 44% of commercial occupiers surveyed indicated that they did not occupy a certified Green Building.

Commercial Occupiers:
Does Your Company Occupy a Certified Green Building?



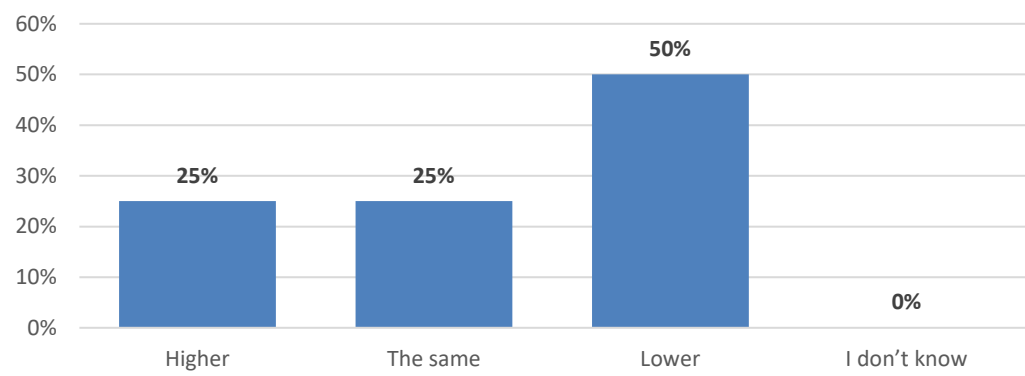
Higher construction cost/purchase price/rental price was listed as the main reason to not occupy certified Green Buildings (80%). The main factors mentioned as most motivating for companies to occupy certified Green Buildings include public recognition and brand enhancement (75%) and carbon footprint reduction (75%).

Main motivators for occupying a certified Green Building



The graph below summarizes commercial occupiers' performance perceptions of the achieved vs predicted savings of certified Green Buildings. Commercial occupiers indicated that the actual savings of certified Green Buildings were higher (50%) or the same (25%) as the predicted savings.

Actual Savings of Certified Green Buildings vs Predicted





Residential Occupiers

Responses: 74

The residential occupiers stakeholder group consisted of a combination of homeowners (82%) and rental tenants (18%). When asked if they lived in a green home, 15% said they did. 37% of respondents were unsure. This could be attributed to the lack of knowledge of certified Green Buildings within this stakeholder group, with only 40% of respondents being familiar or somewhat familiar, with certified Green Buildings. Only 11 of the 73 survey respondents lived in a certified Green Building (15%). As for the rest, when asked what would be the main motivators for respondents to live in a certified Green Building, the response was primarily financial and cost-related. Residential occupiers would be more motivated to pursue living in a certified Green Building if there was a proven financial benefit, either in lower utility and/or operational cost.

Main motivation to buy/rent a certified Green Building

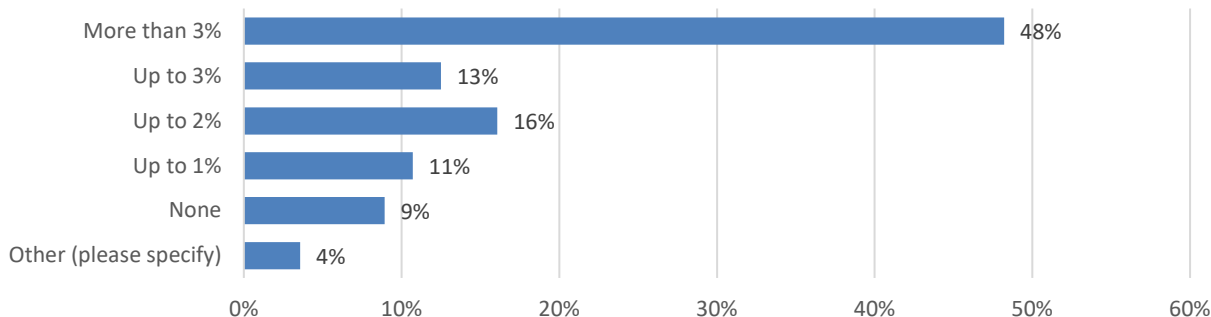


Main obstacle to buy/rent a certified Green Building



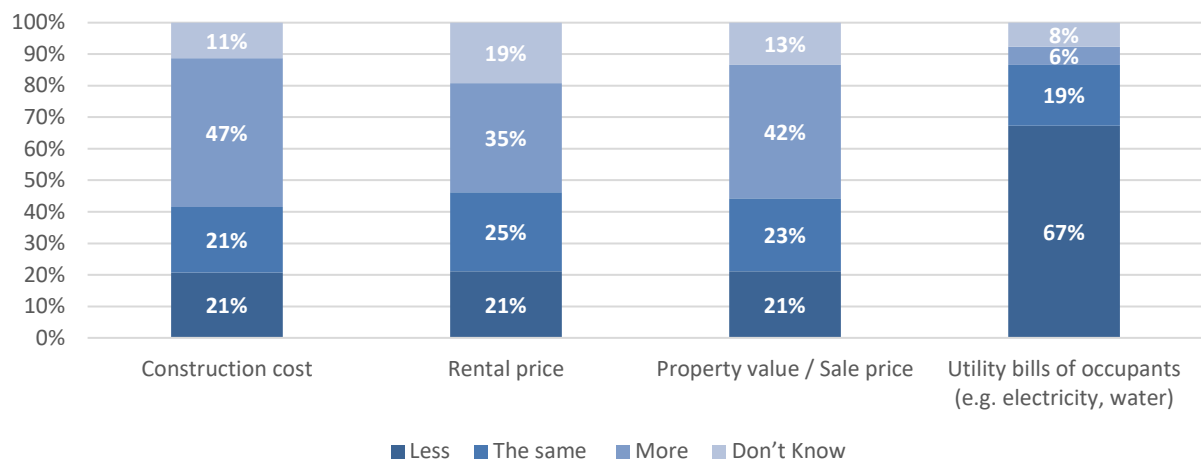
Yet, almost half (48%) of residential occupiers indicated that they would be willing to pay more than 3% of a conventional home's sales price if it enables them to live in a resource and energy-efficient Green Building. This shows some willingness to grow the residential Green Building market and a potential greater future demand for green homes.

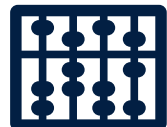
Additional premium to make home energy and resource efficient



Given performance indicators, comparing certified Green Buildings against conventional buildings, the majority of stakeholders estimated that the construction cost, rental price, and sales price are between 5% and 20%+ more for a certified Green Building of the same type. Residential occupiers estimate utility bills to be lower, with half the respondents estimating the savings to be 10-20%+.

Residential Occupiers' Perception of the Cost of Certified Green Buildings vs Conventional Buildings





METHODOLOGY

The stakeholder assessment surveys were conducted through the online survey platform SurveyMonkey. The anticipated time to complete each survey was 10 – 15 min. The Indonesia survey was open for responses from December 2022 to April 2023.

Related but separate surveys were designed for each stakeholder group, each of which considers sector-specific questions related to the Green Building market. The surveys focused predominantly on Green Building familiarity, motivations and obstacles, performance, regulations, and incentives, finance, and source of information.

The number of target survey responses intends to provide a representative, but not exhaustive, assessment of each stakeholder group in each selected Green Building market. However, in some cases obtaining contact information and/or eliciting responses from stakeholders proved challenging, and the target number of responses could not be achieved. In addition, in some cases stakeholders only provided answers to some survey questions. Therefore, the number of responses on which each analysis featured in this report is based can vary.

The target and actual number of surveys for each stakeholder group is presented in the table to the right. Additional information regarding the number of responses on which an analysis is based on is provided throughout the report.

Stakeholder Group/Subgroup		# Target Surveys	# Actual Surveys
Developers	Developers	20	20
Policy Makers	Municipal	10	5
	Regional		
	National		
Development Finance Institutions	Multilateral DFIs	5	5
	National DFIs		
Financial Institutions	FIs (Banks)	5	7
Building Experts	Architects	50	54
	Engineers		
	EDGE experts +Other GB consultants		
	Contractors		
Real Estate Practitioners	Brokers	15	6
	Real estate agents		
	Property managers		
Commercial Occupiers	Corporate Occupiers	40	16
	Retailers & Other		
Residential Occupiers	Homeowners	40	74
	Tenants		
Grand total		200	187

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