

Here's a comparison between **local** values and **variables** in Terraform in table format:

Aspect	Local Values (locals)	Variables (variable)
Definition	Local values are used to define reusable values or expressions within a Terraform configuration. They are for internal use only.	Variables are inputs that are provided to a Terraform configuration, typically to make it more dynamic and reusable across environments.
Scope	Local to the current module. Used only within the module where they are defined.	Can be passed between modules and referenced across multiple environments or configurations.
Purpose	Used for internal computation, reusability, and reducing duplication of code or expressions.	Used to accept input from users, scripts, or other Terraform configurations to control resource attributes.
Modifiability	Cannot be overridden or set from outside the module (fixed once defined).	Can be set or overridden via the command line, .tfvars files, environment variables, or directly in the Terraform plan.
When to Use	When you need intermediate values or want to simplify complex expressions or repeated values.	When you need to provide configurable input to make the infrastructure more flexible and environment-specific.
Declaration	Defined using the locals {} block with a simple key-value syntax.	Defined using the variable {} block with type constraints, default values, and descriptions.
Example Usage	<pre>locals { instance_type = "t2.micro" }</pre>	<pre>variable "instance_type" { default = "t2.micro" }</pre>
Reusability	Cannot be reused across modules or configurations directly. Only available in the scope of the current module.	Can be passed from the root module to child modules or across multiple environments (e.g., dev, prod, staging).
Input Mechanism	No external input is allowed. Value is fixed within the configuration.	Accepts values from external sources like terraform.tfvars , environment variables, command-line input, etc.
Best Use Case	When you want to avoid hard-coding values or duplicating expressions within a module.	When you want to allow users or other modules to supply dynamic values (e.g., region, instance size).
Change Impact	Used to simplify code but does not offer flexibility for changing values between environments.	Provides flexibility by allowing different inputs for different environments (e.g., dev vs. prod).

Aspect	Local Values (locals)	Variables (variable)
Override Capabilities	Cannot be overridden; their value is fixed once defined in the configuration.	Can be overridden by user-provided input from various sources, such as <code>.tfvars</code> , environment variables, or CLI.

Summary:

- Use **locals** when you need internal values to simplify your Terraform code and avoid duplication.
- Use **variables** when you want to pass configurable inputs to your Terraform code from external sources (like command line or `.tfvars` files), making your infrastructure more flexible across environments.