

Smartphones vs. dSLR/Mirrorless Cameras

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One of the worst feelings to experience as a photographer is stumbling upon an amazing photo opportunity (such as a beautiful rainbow) and not having your camera with you. This photographer may squander this opportunity because he forgot he had their cell phone with him.



Back in the late 1990's when digital photography was starting to take hold, the big debate was, "is a digital image better than a film image?" Back then, the digital image was not. However, today images are as good as or better than film.



Today's debate is whether a Smartphone is as good as or better than a dSLR / Mirrorless cameras. The answer is no, not yet.

Which is better; a Smartphone or a dSLR / Mirrorless camera? For this paper, I will use the term dSLR for representing both the DSLR and Mirrorless cameras.

There is an old saying, "The best camera is the one you have with you".

To answer the question right off the bat, a dSLR camera is better. However, there are many factors to take into consideration. Listed below are the advantages of both the Smartphones and dSLR cameras.

Advantages of a Smartphone over a dSLR camera

- Lightweight and will fit in your pockets
- It is a Point and Shoot camera
- Always have it with you
- Uncomplicated and easy to use
- Images are immediately usable
- Apps in the phone allow for easy editing
- Photos can be immediately shared online
- Capable of easily shooting slow-motion and time lapse photos
- Can create easy panorama images without complex editing
- Inexpensive compared to high end dSLR cameras
- HDR, the smartphone automatically will combine the images
- Easy to take videos
- Limitless software updates
- The smartphone camera gets better with each generation of new Smartphones
- No interchangeable lens, so dust won't get into your camera
- A smartphone is more than just a camera



- Can get still images off of a video take with a smartphone
- You do not have to own a computer to edit your photos
- Smartphones have an Electronic Viewfinder (EVF), so what you see in the viewfinder is what you get when you take a picture



Advantages of a dSLR camera over a Smartphone

- Interchangeable Lenses
- Optical Zoom Lens
- Superior image quality (better sensors)
- The ability to have artistic control over the exposure, aperture and ISO
- More options for shooting in low light conditions
- Better overall durability and somewhat water resistant
- Higher resolution images
- Can change out memory cards and/or batteries
- The ability to create high depth of field
- Better dynamic range and color accuracy
- Faster shutter speeds for shooting action or sports
- Capabilities can be enhanced with a variety of accessories
- With videos, you can get longer shooting times
- Customizing controls
- Big grips that let you hold the camera rock-steady
- More control over focusing
- These cameras are built to last longer
- Better Lens (interchangeable)
- Manual Control, you can make all the adjustments
- Better Auto focusing of a fast moving subject, such as sports, car speeding, etc
- Colors are more accurate when a photo is enlarged
- You can blur the background of photo better



As technology advances, there will come a time when Smartphones will become competitive and offer many of the same options found today on dSLR cameras. Both Canon and Nikon have announced that they will no longer be developing new dSLR cameras. They both have switched to Mirrorless camera development.

For now, Mirrorless cameras still produce superior quality and provide the versatility advanced and professional photographers need to produce high quality photos. However, for the everyday consumer, a smartphone will provide them with quality photos and features that are fun and affordable.

It is interesting to look back when people said that digital cameras will never replace film cameras. Now we see that Mirrorless cameras are replacing dSLR cameras. How long before Smartphones replace Mirrorless cameras?

When considering a Smartphone to a Mirrorless camera, ask yourself is a Smartphone good enough to meet your photographic needs? If you are an advanced or professional photographer the dSLR camera will be what you will have to have for now. However, there is nothing to say you can not use both.

“It is not the camera that makes a good image in the same way it is not the typewriter that’s make a great novel.” Karl Taylor

Is a Smartphone Camera Better Than a DSLR

We have discussed the advantages of both the Smartphone and dSRL. Now let’s go into more detail.

Cost

- It is hard to compare costs. You can buy a Canon Rebel Kit for around \$400.00. If you go with T-Mobile/Verizon, you get a \$1000.00 off a new phone depending upon the plan to enroll in. Or you can buy a Canon R3 camera body for about \$6000.00 with no lens. However, how many new phones will you buy just to get a better camera phone? So it is like comparing apples to oranges.



Learning Curve

- The Smartphone is pretty easy, just point the phone camera at whatever you want to take a picture of and shoot. The Smartphone camera will make all the adjustments needed inside the camera to take a good picture.
- The dSLR camera is a little more complex. Yes you can put the camera on Auto and let the camera make all the adjustments, just like a Smartphone. Or you can make your own adjustments to the camera such as: Shutter Speed, ISO, F-Stop, White Balance, etc.

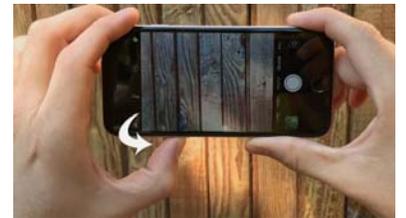
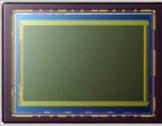


Image Quality or Resolution

The image quality on a dSLR camera is much better than on a smartphone. The new iPhone 14 has a 48 megapixels camera. However, if you use the wide angle or telephoto lens, it goes down to 12 megapixels. The Canon R5 has 45 megapixels at any range, so what's the difference?

The difference is in the size of the sensors. The sensor is the backbone of any digital camera. It's what captures light information that is processed into an image. In the days before digital cameras, this light was captured onto film.

On a dSLR camera the sensor is physically much larger than a smartphone. The larger sensor will let more light and produce a better picture with more dynamic range especially, in low light conditions.

Sensor Name	Medium Format	Full Frame	APS-H	APS-C	4/3	1"	1/1.63"	1/2.3"	1/3.2"
Sensor Size	53.7 x 40.2mm	36 x 23.9mm	27.9x18.6mm	23.6x15.8mm	17.3x13mm	13.2x8.8mm	8.38x5.59mm	6.16x4.62mm	4.54x3.42mm
Sensor Area	21.59 cm ²	8.6 cm ²	5.19 cm ²	3.73 cm ²	2.25 cm ²	1.16 cm ²	0.47 cm ²	0.28 cm ²	0.15 cm ²
Crop Factor	0.64	1.0	1.29	1.52	2.0	2.7	4.3	5.62	7.61
Image									
Example									



In the past, everything was based on a 35 mm slide film (23mm x 34 mm). Any digital camera that meets the requirement of a 35 mm slide is considered a Full Frame Camera.

So what does this all mean? If you blow a picture up from either a dSLR or smartphone to a 8 x 10, you probably won't see any difference in quality. However, if you blow the photo up to 18 x 24, you will start to see that the smartphone photo is not as sharp as the dSLR one.

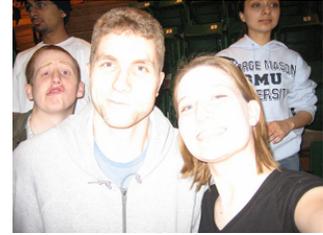
However, if you keep the photo to 5x7 or 8x10, the smartphone will do some in camera processing and the photos will come out looking really good. The one on the left was taken with a dslr camera and the one on the right with an iphone. Both photos were cropped to 5x7.



The dSLR photo (left) was processed using Lightroom. What is interesting is if you bring an iPhone photo into a processing program like Adobe Lightroom and go to the Develop Mode. Press Auto button to automatically let the computer correct the various aspects of the photo. The sliders do not move. However with dSLR, photo, every slider will move to correct the photo.

In the meantime, if you are using a Smartphone as your main camera, consider the following:

1. Make sure you have plenty of light. Natural light is always the best. Avoid using the flash on your smartphone; it can often wash out your photos.



2. Try to steady your hand as much as possible. If you are taking a landscape photo, considering using a tripod.



3. Do not use the digital zoom on your smartphone. When you use a digital zoom, the camera enlarges the image area at the center of the frame and trims away the outside edges of the picture. This in turn lowers the quality of your photo. Instead use a digital software program to crop your photo

