

Market Analysis -

PUNCTURE REPAIR INDUSTRY ANALYSIS



The Expanding Customer Base in the Bicycle, E-Bike, and E-Scooter Industry

The bicycle, e-bike, and e-scooter sector is witnessing remarkable expansion.

The market landscape for bicycles, e-bikes, and e-scooters is not only extremely vast with nearly 9 billion tires roaming the globe but also exhibits robust growth trends, with economic downturns paradoxically serving as catalysts for increased market expansion. For instance, during the unprecedented global economic disruptions caused by the COVID-19 pandemic in 2020, the global market expanded by an impressive 17%. Forecasts predict a steady ascent, with an anticipated Compound Annual Growth Rate of 15.6% up until 2030. With clear indicators of a significant and sustained boom in the sales of bicycles and e-bikes across several nations. In Germany, as per the German Bicycle Industry Association, there was a noteworthy surge of over 40% in e-bike sales in 2022 compared to the previous year. Concurrently, the United States saw a whopping 65% increase in e-bike sales, as documented by the National Bicycle Dealers Association.

These trends underline the immense market for emergency tire repair solutions and accessories. The industry's growth trajectory is shaped by four main pivotal trends and market dynamics:

- a) **Rapid Urbanization:** Our world is experiencing an increasing wave of urban growth. By 2050, nearly 70% of the global population is expected to live in urban areas. With cities swelling in size, the transportation infrastructure has become increasingly strained, leading to heightened traffic congestion and extended commuting times. Cycling, with its compact nature and efficient use of space, has emerged as an appealing solution to mitigate these issues. Creating significant pressure for on-the-go tire repair products.
- b) **Technological Advancements:** The evolution of electric and battery technologies has significantly boosted the capabilities of e-bikes and e-scooters. They can now achieve greater distances at higher speeds at a low cost, becoming a viable choice for a broader audience, ranging from young to mature urban commuters.
- c) **Inflation and Cost of Living:** The economic climate has seen a substantial increase in the average cost of living and car ownership due to inflation. This includes rising costs associated with insurance, fuel, maintenance, and parking. Against this backdrop, bicycles and e-bikes represent a significantly more economical transportation option. Given the continual rise in cost of

living, these alternative modes of transportation are becoming increasingly appealing to those seeking to mitigate the financial impact of inflation and higher living costs.

d) **Political Changes & the Advent of 15-minute Cities:** Globally, cities are undergoing a paradigm shift towards sustainability and people-centric planning, driven largely by the urgent need to address climate change and urban congestion. The "15-minute city" model, which emphasizes the accessibility of essential services within a 15-minute walk or bike ride from homes, is gaining global momentum. This model is set to fundamentally transform urban lifestyles and transportation choices, prompting more city dwellers to shift towards cycling. Cities, being major contributors to CO2 emissions, are under legislative pressure to adopt sustainable urban planning strategies. Cities like Paris, Montreal, Barcelona, Taipei, and Auckland are pioneering this transformation by adopting the 15-minute city model, taking measures such as reducing car lanes, expanding pedestrian spaces, creating more bike lanes, and repurposing parking lots into bicycle lanes. The rise of 15-minute cities, coupled with increased investments in cycling infrastructure, is predicted to boost the use of bicycles, e-bikes, and e-scooters significantly.

Navigating the Competitive Landscape of Tire Repair Products

The landscape for emergency tire repair products teems with both prospects and hurdles for addressing consumer requirements. In 2022, the international market worth of these products catering to bicycles stood at approximately USD 2.2 billion. Projections indicate growth to USD 3.2 billion by 2028.

This emergency tire industry principally revolves around three emergency tire repair alternatives:

- a) Aerosol cans encapsulating tire sealants.
- b) Mechanical plugs exclusively designed for tubeless tires.
- c) Patches for bicycle tire inner tubes.

Aerosol cans equipped with valve-throw tire sealants deliver on the convenience front. However, their effectiveness is limited as they only have the capacity to seal minor punctures up to 1-1.5 mm in size. These aerosols offer a temporary fix at best but fail when confronted with larger punctures, thus

Aerosol

Valve-Through
tire sealant
technology



- Easy To Use
- Temporary only.
- Seals only very small punctures.
- High Failure Rate.
- Harmful chemicals

preventing their widespread adoption due to lack of reliability and due to the fact that users still are required to reach a repair shop for a lasting solution.

Tire plugs tend to provide a solid and reliable puncture reaper. However tire plugs are only suitable for tubeless tires. In addition their application demands specialized equipment and technical expertise, hence their market outreach is small due to the product application limitations.

Bicycle tire patches are the most common form of emergency tire repairs, they are cheap, extremely effective but present application challenges. The application process is normally intricate and time-consuming. In order to create a repair one needs tools to remove the wheel, and tire from the rim, then search for punctures in the tire using tedious visual inspection, abrade the surface of the inner tube, apply glue, wait for 5-10 minutes and then reinstall the tire and inflate, all in order to perform a puncture repair. Apart from it being out of reach for the majority of bicycle users due to the technical expertise it remains an unsatisfactory solution for those who lead a busy lifestyle, particularly anyone living in a Western country.

Alongside these emergency repair options two other options widely used in the war punctures. The landscape for permanent tire repair products

Inner Tubes, due to the failure of emergency tire repair solutions to cater to customer needs and technical skill level most of the bicycle riders rely on replacement of the inner tube in cases of a flat tire. This is normally done in the bicycle to a bicycle repair shop, or in cases where the riders have some level of technical know-how they rely on changing the inner tire themselves.

Preventative tire sealant - Alongside these emergency repair options, that last option is the use of effective non-valve-throw tire sealants deployed in advance as preventive measures. However, the application process requires customers to be able to remove the valve core in order to get the tire sealant past the valve stem.

Tire Plugs

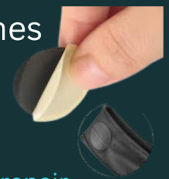
Tubeless tire
Repair for large
punctures



- Permanent repair
- Fast tire repair
- Only good for tubeless tire
- Requires technical skill
- Requires tools
- Plugs are predetermined puncture size

Patches

Tire patches
for tubed
tires



- Permanent repair
- Cost effective
- Requires technical skill
- Requires tools
- Takes 20-30 for a single repair
- Requires strong hands to remove the tire and seat it back.
- Only good for tubed tires

The necessity for knowledge in valve mechanism removal and a messy sealant application deters many potential users. Additionally, the inability to remove many presta valve cores altogether bars the possibility of injecting these sealants. Problematic reputation is another hurdle for widespread adoption. Sealant dry out occurs by design, and many customers are unaware of the regular top-ups required to maintain puncture proof protection. Together with variations in sealing effectiveness across different sealant brands this unfortunately has led to a tainted reputation for these preventive tire sealant solutions. Moreover, the on-the-go top-up application of the non-valve-throw tire sealant has proved to be extremely inconvenient rendering it practically an unused practice. Lastly many local bicycle stores choose to prioritize repeat customer visits for puncture repairs by replacing the inner tube rather than actively promoting these sealants as the recurring visits potentially increase store revenue.

Promising Opportunities in the Emergency Tire Repair Market

In light of the significant shortcomings, the market for emergency tire repair products serves as a goldmine of opportunity for innovative and game-changing solutions. This gap paves the way for breakthrough innovations that can cater to riders of all levels of expertise, delivering an efficient and lasting solution that moves beyond the confines of conventional tire repair methods.

At present, even though several companies offer emergency repair products, the current market value of USD 2.31 billion barely scratches the surface of the true potential within this market. This disparity stems from the application requirements and limitations that plague current day solutions. Our comprehensive market research and product suite unveils a vast landscape for revolutionary innovations that could not only empower riders to have carefree rides, but also completely revolutionize the entire industry, giving rise to a new category of superior emergency tire repair solutions.

The insights derived from our exhaustive market research paint a promising picture. An overwhelming two-thirds of global bicycle riders who participated in our online survey indicated a strong inclination towards Oro Savior International's emergency tire repair products over traditional market alternatives. This preference remained robust even when considering the premium price associated with our cutting-edge high-quality products. Particularly in Western countries, an impressive 69.5% of respondents expressed a preference for our products, illustrating their perceived superior value and appeal. Additionally, a staggering 71% of preventative tire sealant (non-value throw) users expressed a clear predilection for Oro Savior International sealant injection

solution over their conventional brands. This showcases the strong market acceptance and recognition of the exceptional value offered by our products, despite their higher price point. These compelling findings underscore a robust market demand and readiness for Oro Savior International's innovative emergency tire repair products among all levels of bicycle users.

By adeptly addressing the limitations of existing options and delivering exceptional customer value, our products are perfectly positioned to not only seize a sizable market share but also dramatically increase market share. Looking forward, for our growth journey, we plan to expand our product portfolio to encompass a diverse range of bicycle accessories.

Conclusion

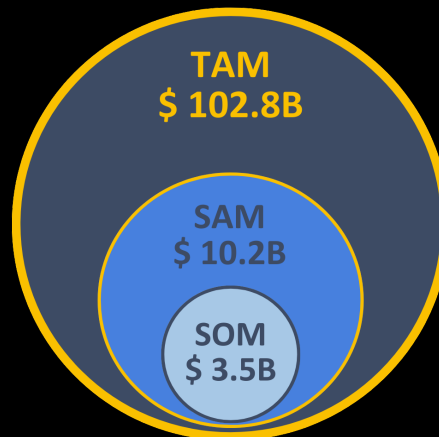
The bicycle, e-bike, and e-scooter industry is huge with over 2.4 Billion vehicles globally, while still undergoing rapid growth during these economic turmoil that are driven by factors such as urbanization and rising living costs. Within this market, the segment of emergency and permanent tire repair products stands as a significant untapped market opportunity as existing solutions in the market fall short in meeting the demand for user-friendly, reliable, and effective puncture repair options. The savior product With our globally patented technology, and growing patent portfolio we aim to close this market gap.

Moreover, industry analysts predict that by the end of the decade, the total market for bicycle, e-bike, and e-scooter inner tube, emergency tire repair and prevention solutions market value will exceed \$10 billion annually. As we continue to grow our product line we also have the opportunity to capitalize on the thriving global bicycle accessories market, valued at \$12.14 billion.

TAM, SAM, SOM

The table below shows the TAM,SAM,SOM for oro savior international. This table is a result of extensive market research including a global on-line survey.Please see next section for reasoning and resources.

FUTURE MARKET CAP FOR ORO EMERGENCY REPAIR	
TAM (Total Addressable Market) vehicles	2,415,549,500
SAM (Serviceable Addressable Market) vehicles	216,562,038
SOM (Serviceable Available Market)) vehicles	76,112,712
ORO Savior International Global Market Share	1.31%
(SOM) ORO Savior International Global Market CAP	\$3,437,766,066



TAM,SAM,SOM Full Table

TAM (Total Addressable Market)					
	bicycles	E-bikes	E-Scooters	Total	
North America	120,000,000	25,000,000.00	342,000	145,342,000	
Europe	537,600,000	90,000,000	405,000	628,005,000	
East Asia	598,000,000	125,000,000	592,500	723,592,500	
South Asia & Pacific	674,500,000	20,000,000	75,000	694,575,000	
Latin America	214,000,000	10,000,000	35,000	224,035,000	
Estimated Vehicles	2,144,100,000	270,000,000	1,449,500	2,415,549,500	
TAM (vehicles)				2,415,549,500	
TAM (CAP)				\$102,808,756,000	
SAM (Serviceable Addressable Market)					
	bicycles	E-bikes	E-Scooters	Total	SAM %
North America	91,800,000	19,125,000.00	261,630	111,186,630	76.5
Europe	78,000,000	16,250,000.00	263,250	94,513,250	65
East Asia	4,080,000	850,000.00	20,145	4,950,145	3.4
South Asia & Pacific	2,400,000	500,000.00	1,500	2,901,500	2
Latin America	1,200,000	250,000.00	350	1,450,350	1
Estimated Vehicles	177,480,000	36,975,000	546,875	215,001,875	
SAM (vehicles)				215,001,875	
SAM (CAP)				\$10,245,674,040	
Average SAM				9.97%	
SOM (Serviceable Obtainable Market)					
reagon	People how choose oro in online survey in %	50% Deduction from all positive answers from online global survey indicating savior preference over other bicycle repair solutions	Average Annual spending on oro	SOM number of vehicles	Regional marketcap (SAM) Calculated
North America	68.4	34.2	\$48	38,025,827	\$1,825,239,718
Europe	69.3	34.7	\$48	32,748,841	\$1,571,944,374
East Asia	84.7	42.4	\$40	2,096,386	\$83,855,456
South Asia & Pacific	70.0	35.0	\$40	1,015,525	\$40,621,000
Latin America	73.7	36.9	\$40	534,454	\$21,378,159
(SOM) vehicles				74,421,034	
(SOM) CAP				\$3,543,038,707	
Future Potential - MARKET CAP FOR ORO EMERGENCY REPAIR					
TAM (Total Addressable Market) vehicles				2,415,549,500	
SAM (Serviceable Addressable Market) vehicles				215,001,875	
SOM (Serviceable Available Market)) vehicles				74,421,034	
Average SAM				9.97%	
ORO Savior International Global Market Share (CAP)				3.45%	
(SOM) ORO Savior International Global Market CAP				\$3,543,038,707	

TAM,SAM,SOM resources and reasoning.

Link to full Eexcel document:

https://docs.google.com/spreadsheets/d/1wGkR7SHk_o3hZWYQO4DYNuR12yVvH9kEOrcJgwW9EVw/edit?usp=sharing

Market Opportunity (TAM, SAM, and SOM)

Unleashing a multi Billion-Dollar Market Opportunity: Redefining the Emergency Tire Repair Industry

Total Addressable Market (TAM) Calculation:

In determining our Total Addressable Market (TAM), we have leveraged a multitude of online sources to investigate the total number of bicycles, e-bikes, and e-scooters across each targeted region. We meticulously cross-referenced this data from multiple sources to ensure a robust and accurate estimation of our potential market. This approach provides us with a clear view of the maximum potential for market capture in each region.

Serviceable Available Market (SAM) Calculation:

To calculate the Serviceable Available Market (SAM) for our innovative emergency tire repair solution and inflation systems, we have taken into account competitors, regional market dynamics, supply chains, the extent of patent protections, customer preferences, purchasing habits, and our marketing strategy. We broke down the serviceable available market by global regions. Below are our potential market SAM across various regions. The global average SAM is 9.97% of the TAM:

North America (76.5% SAM)

Our firm footing in North America is strengthened by robust patent protections and a receptive market for advanced technologies. North American consumers demonstrate significant purchasing power and are familiar with buying from online marketplaces and frequenting large retail stores where our products will be available. The presence of retail giants like Walmart and Target also offers opportunities for in-store sales. These factors, along with our product's superior benefits, wide patent protection substantiate a high SOM of 85%.

Europe (65% SAM)

Europe mirrors North America in terms of market maturity, purchasing power, and adoption of eco-friendly, technologically advanced solutions. European e-commerce sales are expected to reach \$425.5 billion in 2021. Decathlon, one of our key retail partners, has a strong presence in this region. With consumers habituated to shopping online and in large retail stores - the key touchpoints of our distribution strategy - we are primed for substantial market capture. Our strong patent protection and high customer preference in Europe further justify an 85% SOM.

East Asia (3.4% SAM)

With its large population and growing middle class, combined with the widespread use of bicycles in the region, East Asia presents a significant market opportunity for our tire repair solutions. The rising disposable income and consumer demand for high-quality and convenient products further enhance the market potential, especially considering the thriving e-commerce sector in China.

However, it is crucial to acknowledge the challenges we may face due to limited intellectual property protection and competition from local tire companies. While we have obtained design patent protection, the scope of our utility patent portfolio may impact our competitive advantage. Considering these factors, we have conducted a thorough analysis and determined a Serviceable Available Market (SAM) of 24% for the East Asia market.

South Asia & Pacific (2% SAM)

In the South Asia & Pacific region, we face challenges similar to East Asia, exacerbated by difficulties in establishing robust distribution channels. The region is experiencing rapid internet penetration and e-commerce growth, however logistical hurdles, lower purchasing power and partial patent protection hinder. However on the other hand strong customer interest validated on our on-line survey we factor all into our conservative SAM of 12% .

Latin America (1% SAM):

Latin America, while promising by customer needs ,and despite the region's rapid e-commerce growth. while we intended to capture the market with online sales and white label partnership with selected tire sealant companies. Issues such as delivery logistics, lower purchasing power, and lack of patent protection can impact your market capture. Accounting for these region-specific variables, we have projected a SAM of 5%.

These figures are dynamic and will be subject to reassessment as we gather more market data and refine our strategies. Nevertheless, our unique product offering, marketing strategy and growing patent protection gives us a competitive advantage in these markets, positioning us for robust growth.

Serviceable Obtainable Market (SOM) Calculation

To calculate the Serviceable Obtainable Market (SOM), we followed a four-step process:

1. We conducted a comprehensive global online survey, segmented by region. This survey employed a variety of measurement techniques to gauge customer preferences and their likelihood to purchase our products.
2. We collated the information and analyzed the statistical data from the survey, directly calculating the percentage of people with a high likelihood of purchasing our innovative products over their traditional methods of dealing with flat tires.
3. From the total percentage of survey responses favoring Oro Savior International's product by region, we deducted half. This adjustment accounts for potential discrepancies between positive survey responses and actual purchasing behavior, providing a more conservative and realistic market estimation. This approach ensures we have a practical understanding of the market share we can realistically capture.
4. Finally, for each region, we made an assumption for the average annual spending. This number was derived from the cost of our products, the market dynamics of each region, strength of intellectual property, and the expected spending for puncture protection for a two-wheel vehicle. This comprehensive approach allows us to accurately estimate our Serviceable Obtainable Market. For the Western markets we assume 48 USD per annual spending. This accounts for the expected future price after customer discount and promotions. For the developing countries we assume 40 USD annual spending this is under adjusted price under alternative brand names suited for the buying power of these markets.

14.a. Global On-Line Survey Results

Here are the results from an anonymous online customer survey. In this survey, we introduced the Savior City and Savior City bundle and asked about customer preferences and willingness to purchase. Our goal was to gauge people's willingness to buy Oro puncture repair products at a specific price compared to other traditional options, such as going to a bicycle repair shop, using a repair patch, removing the valve core and self-applying non-valve throw tire sealants, ask someone else to fix their flat, or purchasing the Oro Savior for \$25 or the Oro Savior Bundle for \$55.

Survey accuracy: The survey included responses from 360 people from 5 different regions. The survey only could reach a fraction of the global cycling community of approximately 2.4 billion riders; however, this initial survey has a margin of error of 5.15% and a confidence level of 95% or 99% confidence with a 6.8% margin of error. These results have provided us with valuable insights regarding customer needs and the huge gap in the emergency tire repair market. We are planning follow-up surveys to further develop and enhance our marketing strategy. Two questioning methods were used, and the results were compared and validated.

Sample Size Calculator link: <https://www.surveymonkey.com/mp/sample-size-calculator/>

The Blue colors represent people how answered they prefer buying an oro savior product. The dark blue represents the people saying that they are most likely to buy an oro savior city bundle (55 USD) and the light blue for a single use product (25USD). The Yellow and orange colors represent the percentage of people who will prefer to use traditional options for puncture repair.

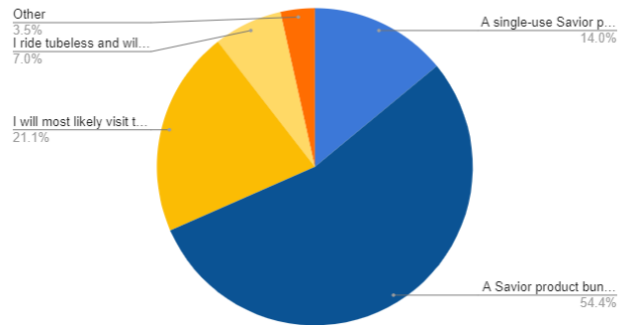
To view the survey answers one can visit: <https://t.ly/ftbxz>

Look under tab: Global Online Survey Resultsy

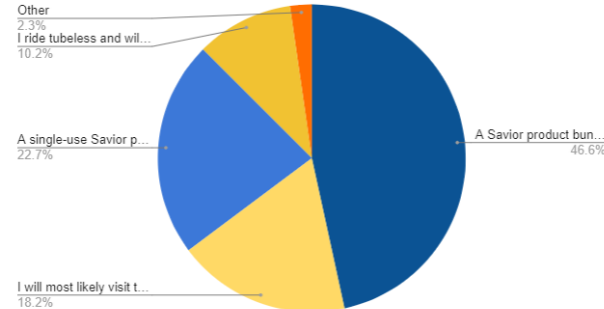
To view the survey questionnaire visit: <https://t.ly/FRbWD>

68.4% of the people in North America replied they are most likely to buy an oro product over other traditional puncture repair options.	69.3% of the people in Europe replied they are most likely to buy an oro product over other traditional repair options.
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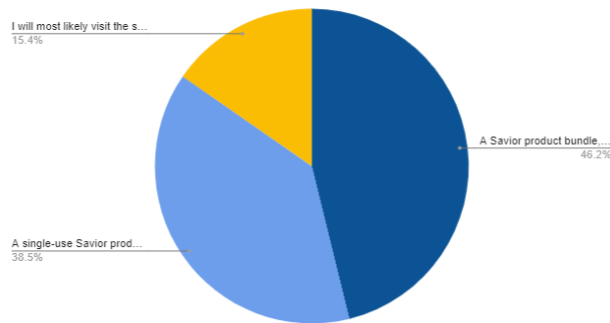
North America



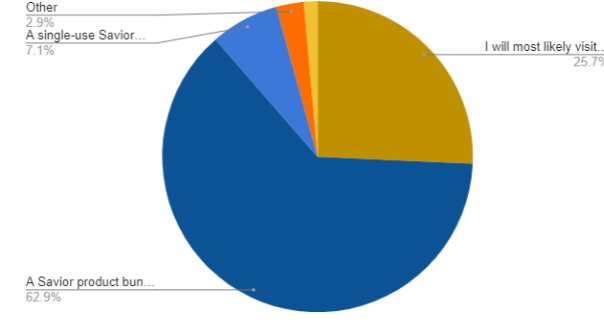
Europe



East Asia

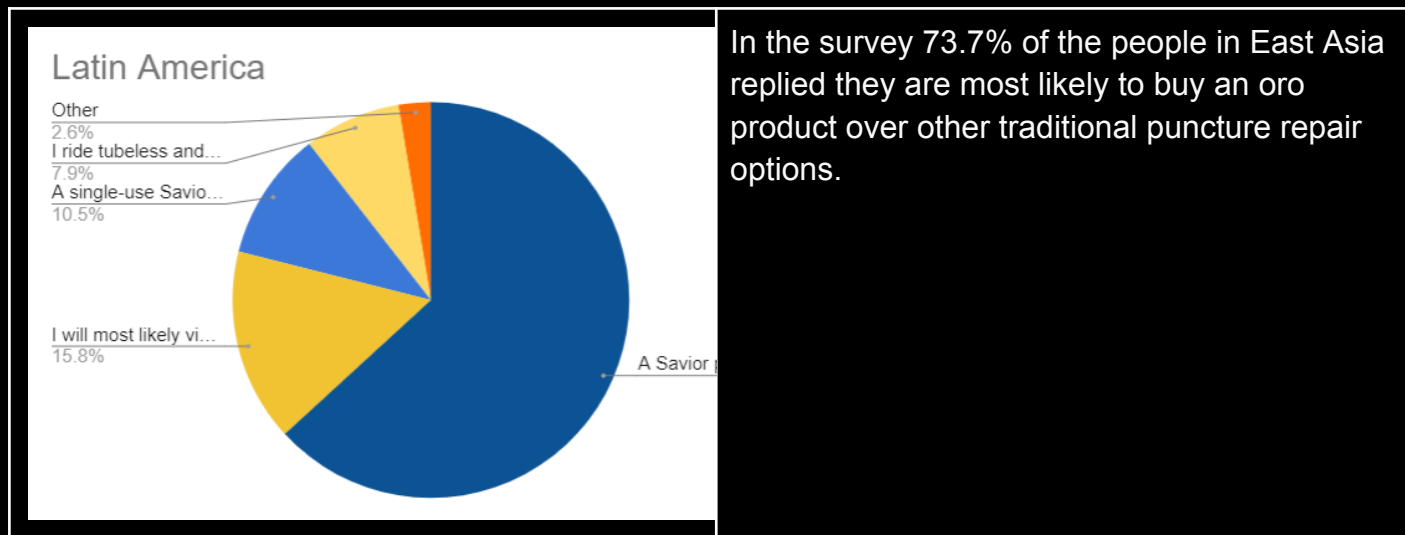


South Asia & Pacific



61.6% of the people in East Asia replied they are most likely to buy an oro product over other traditional puncture repair options.

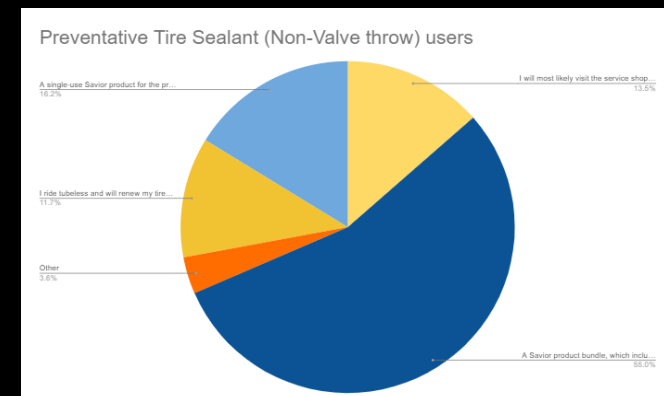
70% of the people in South Asia % Pacific replied they are most likely to buy an oro product over other traditional repair options.



Survey results from riders how wride with preventative tire sealants.

This graph depicts the responses of bicycle riders regarding their usage of preventative tire sealants and their likelihood of purchasing an Oro Savior International product. Our patented technology allows for effortless injection of non-valve throw tire sealants through the valve core, eliminating the need for valve core removal. It is compatible with both Schrader valves and Presta valves. Astonishingly, 71.2% of respondents in this group expressed a high probability of purchasing one of our Oro Savior products.

This remarkable percentage of 71.2% serves as a significant indicator of the considerable inconvenience associated with the traditional method of applying tire sealants, which involves valve core removal and the great value in our patented injection technology.



Market size research resources for reference.

1. Bicycle tire market: The bicycle Tires Market anticipated to hit US\$ 14.6 Billion by 2033 end, expanding at a CAGR of 6.4%
<https://www.globenewswire.com/news-release/2023/06/22/2692564/0/en/The-bicycle-Tires-Market-is-anticipated-to-hit-US-14-6-Billion-by-year-forecast-2033-end-expanding-at-a-CAGR-of-6-4-Future-Market-Insights-Inc.html>
2. Tire patch market - Global tire repair patch market is 2.82 billion. all vehicle types.
<https://www.futuremarketinsights.com/reports/tire-repair-patch-market>
3. Global inner tube market - value for bicycles and e-bikes is expected to reach \$2.04 billion by 2028, growing at a compound annual growth rate (CAGR) of 6.2% from 2022 to 2028. Source by google bard.
4. Global tire emergency tire repair market: value in 2023 for bicycles and e-bikes is estimated to be \$1.58 billion. The market is expected to grow at a CAGR of 6.0% from 2023 to 2028. The tire emergency tire repair market value for bicycles and e-bikes is expected to reach \$2.22 billion by 2028, growing at a CAGR of 6.4% from 2022 to 2028.
5. Shimano has about 70% of global share in bicycle gears and brakes, and approx. 50% of the overall bicycle components market.
<https://d3.harvard.edu/platform-rctom/submission/shimano-dominating-the-bicycle-components-market/>
6. bard AI search : The global inner tube sector market value for bicycles and e-bikes is expected to reach \$2.04 billion by 2028, growing at a CAGR of 6.2% from 2022 to 2028.
7. Claude AI search: current estimate of around \$175 million for global bicycle tire sealant market size
<https://claude.ai/chat/952cc696-2540-4d4a-a8cc-4f8a972d84d1>
8. Global bicycle usage report
<https://www.pwc.com/it/it/publications/docs/pwc-global-bike-and-accessories-market.pdf>
9. Electric-scooter-market
<https://statzon.com/insights/global-electric-scooter-market>
10. 75 million people need a wheelchair on a daily basis. This represents 1% of the world's population.
<https://www.inclusivecitymaker.com/disabled-people-in-the-world-in-2021-facts-and-figures/>
11. Insight to urban computers target audience
<https://nacto.org/shared-micromobility-2018>
12. Examples for TAM, SAM, SOM for sanity check.
<https://www.storeplum.com/knowledge-base/101-tam-sam-som-examples>

