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# Exploring the R&D and profitability relationship in the cosmetics industry

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## ABSTRACT

Research and development (R&D) is a fundamental business activity to enable efficient transformation according to MOEST, or Model of the Organization as an Efficient System of Transformation, by Mella (Mella, 2022; Mella & Gazzola, 2015). The R&D objective is to manage the production factor of 'knowledge'. The innovative attitude allows the company to influence changes in the environment, realizing inventions (ideas) and proposing their implementation (Puddu, 1996). The R&D function must be integrated with other company activities, as marketing, production, financial management and in particular strategic planning, organization, planning and control. The aim of the present research is to analyze the relationship between R&D investments and company profitability in the cosmetics industry. Analyzing its fundamental features, it is considered significant to investigate their correlation, with particular reference to the Original Design Manufacturer (ODM) cosmetic companies. Afterwards the evaluation will concentrate on Intercos Group, a leading Italian company in Europe, even comparing its results with Asian companies, which are considered global leaders in the cosmetics industry.

La Ricerca e Sviluppo (R&S) è un'attività aziendale fondamentale per attuare una trasformazione efficiente secondo il MOEST, ovvero Model of the Organization as an Efficient System of Transformation, di Mella (Mella, 2022; Mella & Gazzola, 2015). L'obiettivo della R&S è quello di gestire il fattore produttivo della "conoscenza". L'attitudine innovativa permette all'azienda di influenzare i cambiamenti dell'ambiente, realizzando invenzioni (idee) e proponendone l'implementazione (Puddu, 1996). La funzione R&D deve essere integrata con le altre attività aziendali, quali il marketing, la produzione, la gestione finanziaria e in particolare la pianificazione strategica, l'organizzazione, la pianificazione e il controllo. L'obiettivo di questa ricerca è quello di analizzare la relazione tra gli investimenti in R&D e la redditività delle aziende nel settore cosmetico. Analizzandone le caratteristiche fondamentali, si ritiene significativo indagarne la correlazione, con particolare riferimento alle aziende cosmetiche Original Design Manufacturer (ODM). Successivamente la valutazione si concentrerà su Intercos Group, azienda italiana

leader in Europa, confrontando anche i suoi risultati con le aziende asiatiche, considerate leader mondiali nel settore cosmetico.

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**Keywords:** Cosmetics Industry, profitability, ODM companies, R&D and profitability relationship, R&D investments.

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## 1 – Introduction

The cosmetics industry is one of the most profitable and constantly evolving global industries. Although cosmetics are considered relatively irrelevant by someone, in reality they play a key role in both the Italian and international economies (Cosmetica Italia, 2022). The cosmetics companies implement continuous investments in research and development that enable them to create highly innovative products capable of responding to ever changing consumer needs (Lee, Whang, & Hall, 2009). Therefore, it is very important to investigate the economic relevance of the cosmetic companies. Trott (1998) suggests a realistic view of R&D defining it as a continuous process, starting with basic knowledge and ending with the introduction of a tangible product (industrial or consumer goods) in the market.

R&D investments represent the costs incurred by companies to implement a series of activities to create new production technologies, raw materials and formulas for the development of new products, or to modify, by improving in terms of effectiveness and efficiency, the existing ones (National Science Foundation, 2018). R&D activities play a vital role within companies. When R&D investments are well implemented, companies can improve the quality of their products or services.

Among the numerous researchers supporting this thesis, the studies of Sougiannis (1994), according to whom the profits achieved by companies are positively influenced by expenditure on research and development when properly performed, and those of Ettlé (1998), who argues that the intensity of research and development has a significant effect on the increase in market share, are particularly relevant. At the same time, successful investment in R&D brings companies positive effects in terms of future growth opportunities, profitability and competitive advantage in the market (Morbey, 1988). Indeed, the costs incurred in research and development represent an added value that enables companies to grow (Pindado, 2010).

Innovation is at the center of business strategies and enables companies to compete in a highly competitive market. For this reason, companies should constantly innovate, developing and improving products and services in order to create ideas that allow them to become more and more profitable. As outcome, companies invest more resources in research and development to innovate their products and become more competitive in the market (Barney, 2001; Hawawini, Subramanian, & Verdin, 2003; Merchant, 2014).

Researchers agree that R&D investments are fundamental for companies to have a positive impact on future cash flows and consequently to create new growth opportunities (Chauvin & Hirschey, 1993). Through R&D expenditure, companies realize new products that help to increase profitability. Supporting this thesis, numerous literature studies have examined the effect of innovation on the profitability of firms (Hirschey, 1982; Roberts & Hauptman, 1987; Grabowski & Mueller, 1988) and have demonstrated that R&D investments have a positive and

significant correlation with firm profitability (Tassey, 1983; Ettlíe, 1998; Ito & Pucik, 1993; Johnson & Pazderka, 1993; Long & Ravenscraft, 1993). Additional studies have confirmed the presence of a positive relationship between R&D expenditure and corporate profit (Chan, 2001; Roberts, 2001; Shah, 2008; Ehie, 2010; Pindado, 2010). Particularly relevant the Shah's analysis (2008) on UK companies (for the period 1998-2002), demonstrating that R&D investments are positively associated with profits.

Another key aspect is that investment in research and development can have a positive impact on companies' future performance, including revenues and sales growth. A number of researchers have identified a positive relationship between R&D expenditure and the financial performance of companies. Therefore, they have confirmed that companies with innovation as a strategic goal and consequently spending greater amounts on research and development will significantly improve their future performance. Studies supported by Lev and Sougiannis (1996) state that current R&D expenditures are positively correlated with subsequent revenues. Furthermore, studies conducted by Eberhart et al. (2004) show that higher R&D investments lead firms to significantly higher future performance. Further empirical research has mainly focused on verifying the real impact of R&D investments on firm profitability. In this regard, Lev and Sougiannis (1996), Chan et al. (2001) and Chambers et al. (2002) found a positive correlation between the level of R&D investments and subsequent firm profits.

However, despite the numerous studies and demonstrations mentioned above, this important research field has been missed in the literature with regard to the cosmetic industry.

The main objective of this study is to investigate the relationship between R&D investments and company profitability in the cosmetics industry. The fundamental features of the industry will be analyzed. Thereafter, it will be considered of interest to investigate the correlation of ODM (Original Design Manufacturer) cosmetic companies, which are those cosmetic companies that are involved in the planning, development, design and production of products, subsequently commercialized and sold on the market under the buyer's brand name (Cosmetic OEM, 2022). The analysis will initially focus on Intercos Group, a leading Italian company in Europe, and secondly compared with Asian companies, which are considered world leaders in the cosmetics industry.

## 2 – The cosmetics industry's features

In the European context, cosmetics are classified as consumer products and are regulated by Regulation No 1223/2009, which characterizes them as substances or mixtures that are used on the external surfaces of the body, teeth or mucous membranes of the mouth, and perform different functions such as protection, cleansing, perfuming, personal hygiene and make-up. Thus, this category includes products for professional use such as those used by beauty parlours and hairdressers as well as products for everyday use such as creams, perfumes, bubble baths and toothpastes (Official Journal of the European Union, 2009; Stojanovic & Borowiecki, 2015; Foley, 2019).

According to Cosmetics Europe (2022a), at least three segments can be distinguished.

a – *Consumer goods*: where the most important competitive lever is price. These goods are considered highly in-fungible, which is why companies constantly adjust prices and monitor the pricing strategies of competitors;

b - *Intermediate goods* (make-up products, skincare, sunscreens): competition is very high. Price is not the only strategic lever. Companies invest in communication, advertising and expanding their range of offerings;

c - *Luxury goods*: purchasing logics are based on the perception of product quality and the status that the good confers on the consumer. Companies compete on the exploitation of communication levers and the innovation of the offer.

Three values are usually attributed to the cosmetic products: (A) social, (B) scientific and (C) economic.

(A) Regarding the *social value*, beauty products are often associated with superfluous and futile consumer goods. In reality, statistical surveys conducted by Cosmetics Europe (2022a) – the European association representing the cosmetics and personal care industry - show that:

- 72% of European consumers consider cosmetic products to be important or very important in their daily routine;

- 71% of European consumers consider cosmetic products to improve their quality of life;

- 70% of European consumers consider the use of cosmetic products to be important for their self-esteem;

- 62% of European consumers identify personal care products and cosmetics as relevant for social interactions.

(B) The *scientific value* of cosmetics represents a real science, where research and innovation are the key factors. European companies spend around 5 per cent of their annual turnover on research and development, in order to implement a range of activities to create new cosmetic products with innovative ingredients and formulas. There are 77 specialized centers and more than 32,000 scientists are employed in research. This feature allows companies to increase their performance and be competitive in international markets (Mereta, 2018).

(C) From an *economic point of view*, according to estimates by Cosmetics Europe (2022b), the European cosmetics industry represents a highly successful business system, on a par with the United States on a global level (with consumption of approximately EUR 80 billion), followed by China (EUR 70 billion), Japan (EUR 27 billion), Brazil (EUR 18 billion), India (EUR 12 billion) and South Korea (EUR 11 billion).

In Europe, the significant weight of Italian cosmetics companies emerges. In recent years, with the exception of the year 2020 characterized by the COVID-19 pandemic crisis, there has been a more than positive trend in the economic performance of Italian companies, which have achieved a global turnover of around 12 billion EUR. In the post-pandemic market, the key word is versatility: the consumer is looking for products capable of performing several actions simultaneously.

According to Dansi (2022), major *investments* are needed in the cosmetics industry:

- Customer operation & business process: to reduce labor costs, error rates and increase investments in robotics and automation;

- Marketing & sales: investments in Machine Learning (ML) and AI technologies;

– Customer experience: specializing in the application of Virtual Reality (VR) and Augmented Reality (AR);

– Supply Chain & procurement: for the purpose of storing and planning of supply through investments in IoT, RPA and Analytics.

With the Russia-Ukraine war outbreak, the cosmetics activities have had significant repercussions on their growth, due to the unavailability of raw materials, rising energy costs, logistical problems and difficulties in accessing domestic markets.

Recently, the increasing focus of academics, organizations and corporate stakeholders even on sustainability has permeated the cosmetics industry (Bom *et al.*, 2019; Kolling and Ribeiro & de Medeiros, 2022; Acerbi *et al.*, 2023).

According to Rocca *et al.* (2022), implementing sustainable practices in the cosmetics industry's business processes (e.g. reducing waste and increasing operational efficiency) may provide many long-term benefits, especially increasing market share and reducing operating costs.

In the cosmetic industry, the Original Design Manufacturer (ODM), which are companies that design cosmetics from zero, starting from the cosmetics formula to the packaged product, are subject to a high level of contractual power maintained by the ordering companies, they are exposed to the risk of failure to obtain new orders and experience a high level of commercial tension caused by a lack of brand recognition in the market, which is typical for companies operating in the B2B sector (Cosmetics Report, 2022a; Park, Hong & Shin, 2023).

The presence of cosmetics companies in Italy is approximately 79.3% and more than half, or 62%, are concentrated in Northern Italy. In particular, Lombardy Region represents the territory with the highest density of cosmetics companies (55%) and at the same time is the region with 67.2% of the industry's turnover.

A significant weight is given by the Lombardy cosmetics district, mainly located in the area between Agrate Brianza, Bergamo, Crema and Milan, defined as the "beauty quadrilateral". Some Italian cosmetics ODM are also concentrated in this area. In Italy, the main subcontractors by revenues are (Bittau, 2022): Intercos Group, Nfh - Farmol, Ancorotti Cosmetics, Tosvar and Hsa Cosmetics.

### **3. Research analysis on the global leading ODM companies in the cosmetics industry**

The cosmetics industry represents one of the most profitable and evolving sectors globally. A company's competitive success is expressed by its ability to constantly develop new products, processes or services that are innovative and provide customers with greater functionality and performance. Investments in R&D have been demonstrated to be a strategic factor that can create future opportunities both in terms of profitability and competitive advantage (Menke, 1997; Bowonder *et al.*, 2010; National Science Foundation, 2018; Insee & Suttipun, 2023).

The main aim of this study is to analyze the correlation between research and development expenditure (R&D) and the growth in profitability of cosmetics companies.

The research analysis focused on four companies belonging to the global ODM cosmetics industry, which are: Intercos Group (Italy), Kolmar Korea (South Korea) and Cosmecca (South Korea) and Meiaisi (China).

Intercos was founded in 1972 by Dario Ferrari in Agrate Brianza, Lombardy (Italy), and is considered one of the leading business-to-business operators operating internationally for multiple brands in the creation, production and marketing of cosmetic products (Intercos, 2022). In geographical terms, Intercos Group has extended its sales network over four continents: EMEA (Europe, Middle East, and Africa), the Americas and Asia, where it has a 48% turnover of the total in the EMEA area, followed by 32% in the Americas and 20% in Asia.

The company's success is based on its ability to focus its attention on research and development activities and to cover all geographical areas with the greatest development potential. Intercos' activities comprise three business units: make-up, skincare and hair & body. Intercos is a world leader and innovation partner for multinational clients, emerging brands and retailers active in the cosmetics market both nationally and internationally.

The famous brands for which Intercos produces cosmetics and provides services are mainly (Ferrari, 2026): Chanel, Dior, Gucci, Lancôme, Estee Lauder, Mac, Nars, Revlon, Gucci, Charlotte Tilbury.

The analysis is then focused on the three Eastern companies, which have achieved Western markets in recent years.

– Kolmar Korea, a company founded in 1990, is based in Sejong, South Korea, and is engaged in the production of original designs and original equipment of cosmetics and pharmaceuticals.

– Cosmecca is engaged in the production of perfumes and cosmetics. It provides product design, production, packaging, storage and transport of cosmetics. The company was founded in 1999 and is based in Eumseong, South Korea.

– Jiangsu Meiaisi Cosmetics, a Chinese company located in Suzhou and founded in 1997, is specialized in hair and skin care products (Eternity Insights, 2020).

The analysis initially considers the Global leading ODM cosmetics companies' data (Orbis database) for a time frame of 8 years (from 2014 to 2021) and for exhaustivity applying the two- and three-years moving average to the variables considered (Revenues, R&D, EBITDA) (Table 1).

#### **4. Research analysis on the R&D costs correlations with EBITDA and revenues of the investigated sample**

Subsequentially two correlations were calculated for each item analyzed, the first between R&D costs and EBITDA and the second between R&D costs and revenue. The correlations of Intercos Group, Kolmar, Cosmecca and Meiaisi were found to vary between 0.879 and 0.996 (Table 2).

This means that all four companies have a correlation with a value very close to 1, which indicates good variation. The results show that both the first and second correlation have variables that are directly correlated with each other and that as the investment in research and development increases, the company profitability also increases.

This positive correlation is also confirmed by analyzing the existing literature. In this perspective, numerous studies have examined the effect of innovation on profit and have shown

that investment in research and development has a positive and significant correlation with corporate profitability (Chan, Martin, & Kensinger, 1990, Doukas & Switzer, 1992, Chauvin & Hirschey, 1993, Szweczyk, Tsetsekos, & Zantout, 1996).

**Table 1 - Global leading ODM cosmetics companies' data [two- and three- years moving average] (Source: Own elaboration on data from Orbis database: values in EUR million).**

Intercos							
	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
Revenues	376	425	519	641	702	660	640
R&D	24	26	29	33	35	33	31
EBITDA	55	61	74	95	111	103	92
	2014-2015-2016	2015-2016-2017	2016-2017-2018	2017-2018-2019	2018-2019-2020	2019-2020-2021	
Revenues	400	480	577	665	670	664	
R&D	25	28	31	34	33	33	
EBITDA	58	69	84	103	103	101	
Kolmar							
	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
Revenues	383,0	472,0	582,0	850,5	1060,5	1025,0	1085,0
R&D	1,5	2,5	3,0	7,5	12,5	13,5	14,5
EBITDA	42,0	53,5	57,5	69,0	88,5	102,5	95,5
	2014-2015-2016	2015-2016-2017	2016-2017-2018	2017-2018-2019	2018-2019-2020	2019-2020-2021	
Revenues	430,00	528,00	741,67	920,33	1037,00	1076,67	
R&D	2,00	2,67	6,00	9,33	13,00	14,00	
EBITDA	47,67	54,33	65,67	77,67	95,67	95,33	
Cosmecca							
	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
Revenues	64,43	103,71	135,88	189,46	251,85	260,38	274,48
R&D	2,82	3,76	4,67	5,74	6,95	7,90	8,54
EBITDA	3,72	7,83	9,72	9,46	10,97	11,68	15,06
	2014-2015-2016	2015-2016-2017	2016-2017-2018	2017-2018-2019	2018-2019-2020	2019-2020-2021	
Revenues	86,20	116,48	169,56	215,24	252,55	271,92	
R&D	3,30	4,20	5,24	6,32	7,40	8,19	
EBITDA	5,98	8,19	9,81	10,29	11,12	14,03	
Meiaisi							
	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
Revenues	7,61	8,93	10,11	11,69	13,29	15,84	n.d.
R&D	0,00	0,29	0,55	0,56	0,64	0,75	n.d.
EBITDA	1,36	1,68	2,10	2,90	3,41	4,31	n.d.
	2014-2015-2016	2015-2016-2017	2016-2017-2018	2017-2018-2019	2018-2019-2020	2019-2020-2021	
Revenues	8,24	9,54	10,95	12,45	14,77	n.d.	
R&D	0,20	0,37	0,57	0,60	0,70	n.d.	
EBITDA	1,45	1,98	2,48	3,13	3,95	n.d.	

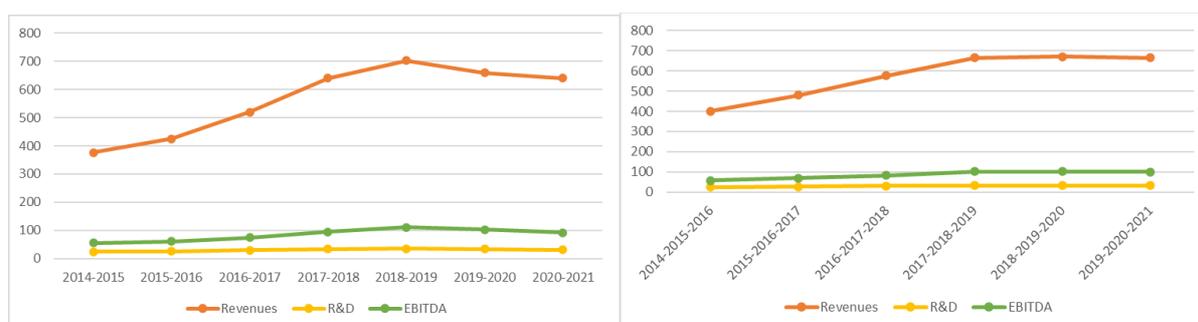
## 5. Research analysis on the R&D investments and economic performances of the investigated sample

In order to complete the analysis on the major international ODM, R&D investments and economic performances of the four companies: Intercos Group, Kolmar Korea, Cosmecca and Meiaisi were analyzed and compared.

**Table 2 – R&D and performances correlations [two- and three- years moving average]**  
(Source: Own elaboration on data from Orbis database: values in EUR million).

<b>Intercos</b>		
<b>Correlation between R&amp;D and EBITDA</b>	0,987	0,991
<b>Correlation between R&amp;D and Revenues</b>	0,989	0,994
<b>Kolmar</b>		
<b>Correlation between R&amp;D and EBITDA</b>	0,980	0,996
<b>Correlation between R&amp;D and Revenues</b>	0,979	0,986
<b>Cosmecca</b>		
<b>Correlation between R&amp;D and EBITDA</b>	0,932	0,963
<b>Correlation between R&amp;D and Revenues</b>	0,989	0,996
<b>Meiaisi</b>		
<b>Correlation between R&amp;D and EBITDA</b>	0,879	0,944
<b>Correlation between R&amp;D and Revenues</b>	0,898	0,943

With regard to Intercos Group, the Italian ODM reveals a growing trend up to the two-year period 2018-2019, followed by a decreasing trend for the following two years, 2019-2020 and 2020-2021, respectively (Figure 1).



**Fig. 1 – Intercos R&D investments and economic performances [two- and three- years moving average]** (Source: Own elaboration on data from Orbis database: values in EUR million).

An analysis of Intercos' financial statements shows that the reason for the decrease is mainly attributable to the cost containment initiated by management, while giving preference to long-term projects, in order to monitor cash flows and invest less aggressively. In this way, Intercos demonstrated that it was pursuing its goal of consolidating product innovation and strengthening its production process in an effective and less costly manner.

Finally, other reasons that may have led Intercos to show a decrease in the two-year period 2019-2020 and 2020-2021 may relate to the competitive environment and continued customer demands.

Intercos is active in a highly competitive market characterized by the need to constantly innovate and launch new products on the market. This is because cosmetic products in the make-up, skincare, hair & body segments have a short life cycle due to their high innovation factor and their close link to the world of fashion. Companies in this industry must be able to anticipate the changing and increasingly sophisticated needs of consumers in terms of product quality, safety and sustainability. It is supposed that Intercos was not able to research and develop cosmetic products in a timely manner with such aesthetic, technical and technological characteristics as to make them innovative on the market and appreciated by consumers. Thus, leading Intercos to suffer a decrease and not achieve the expected results in terms of the number of innovative products and revenues obtained from such products. Finally, Intercos' success over the years is mainly since many cosmetic companies have chosen to outsource the production of one or more product categories. However, in the two-year period 2019-2020 and 2020-2021, a period in which Intercos showed a decrease, a trend may have occurred whereby companies that had decided to outsource in the past have decided to internalize the production of one or more product categories and/or one or more stages of the production chain, thus leading to a reduction in customers, production and consequently in company profitability.

On the other hand, with regard to the three Oriental companies Kolmar, Cosmecca, and Meiaisi respectively, after creating the figures related to the moving average over the period of two and three years, and calculating the percentage changes in revenues, R&D expenses, and EBITDA, it appears that the trend of these three companies is always increasing for all the study variables. In effect, the analysis on the three Asiatic companies reveals that their performances are always increasing (Kolmar: Figure 2; Cosmecca: Figure 3; Meiaisi: Figure 4).

These results are in accordance with the literature findings (Park, Hong & Shin, 2023). Cheng (2022), for instance, showed that R&D costs are positively correlated with annual revenue in the current year, in particular for the Chinese cosmetics' developing companies.

Examining the balance sheets of Oriental companies, it can be deduced that the reason for the steadily increasing trend stems from the lower costs related to the production, management and distribution activities of the product, which are probably carried out and supervised within the local or continental geographic area of the companies, at the same time located in geographic areas with notoriously high demographics (such as China and Korea).

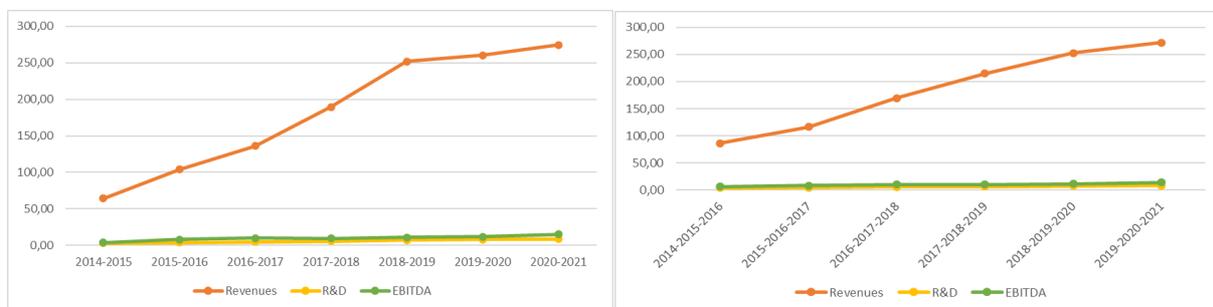
## 6 – Conclusions

The objective of this research was to investigate the relationship between R&D investments and company profitability in the cosmetics industry. Analyzing the fundamental features of the cosmetics industry, it was considered significant to investigate their correlation, with particular reference to the Original Design Manufacturer (ODM) cosmetic companies, which are those cosmetic companies that deal with the planning, development, design and production phase of products, subsequently commercialized and sold on the market under the purchaser's brand name.

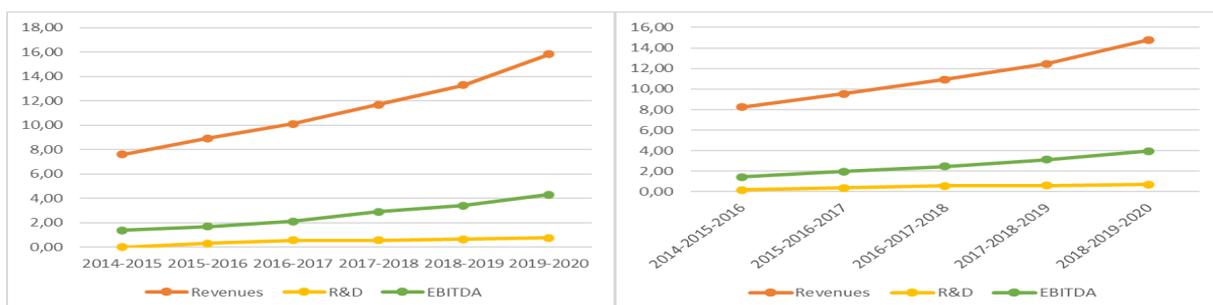
The analysis initially considers the Global leading ODM cosmetics companies' data (Orbis database) for a time frame of 8 years (from 2014 to 2021) and for exhaustivity applying the two- and three-years moving average to the variables considered (Revenues, R&D, EBITDA).



**Fig. 2 – Kolmar R&D investments and economic performances [two- and three- years moving average]** (Source: Own elaboration on data from Orbis database: values in EUR million).



**Fig. 3 – Cosmecca R&D investments and economic performances [two- and three- years moving average]** (Source: Own elaboration on data from Orbis database: values in EUR million).



**Fig. 4 – Meiaisi R&D investments and economic performances [two- and three- years moving average]** (Source: Own elaboration on data from Orbis database: values in EUR million).

Afterwards two correlations were calculated for each item analyzed, the first between R&D costs and EBITDA and the second between R&D costs and revenue. The correlations of Intercos Group, Kolmar, Cosmecca and Meiaisi were found to vary between 0.879 and 0.996.

This means that all four companies have a correlation with a value very close to 1, which indicates good variation. The results show that both the first and second correlation have

variables that are directly correlated with each other and that as the investment in research and development increases, the company profitability also increases.

This positive correlation was also confirmed by analyzing the existing literature.

In order to complete the analysis on the global ODM, R&D investments and economic performances of the Italian company Intercos (European leader) and the Asian companies Kolmar Korea, Cosmecca and Meiaisi (world leaders) were analyzed and compared.

The analysis showed a very different scenario among the companies analyzed. Intercos has seen decreasing economic results for the period 2019-2021, most probably due to the COVID-19 pandemic, while Asian companies experienced positive economic performances arguably due to the lower costs of production, management and distribution of the product available in their market. In conclusion, the results of this study have demonstrated that the intensity of R&D in the cosmetic industry is relevant. There is a positive correlation between research and development investments and the profitability of the global cosmetics companies belonging to the ODM business. It is possible to argue that cosmetic companies that are more strongly investing in research and development have a greater opportunity to improve their innovation capabilities and consequently generate higher profitability and be more successful. These results are confirmed by the literature analysis, that has widely demonstrated as the R&D investments have a positive influence on company innovation and economic performances.

In a highly competitive environment, companies are driven to pursue opportunities that will allow them to grow in the market and to succeed, in order to become leaders. Indeed, R&D expenditure is considered a key strategic factor in enabling companies to continuously improve their products and services; and if these investments are well implemented, companies will achieve better performance.

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