

Promotion of dual training form and its' tools at a large company

Zsuzsanna Felícia Pretz
University of Óbuda
Alba Regia Technical Faculty
Székesfehérvár, Hungary
pretz.zsuzska@gmail.com

Éva Takács
University of Óbuda
Alba Regia Technical Faculty
Székesfehérvár, Hungary
takacs.eva@amk.uni-obuda.hu

Abstract— The theoretical goal of our thesis was to popularize the dual training form and support the need of a dual brand within the company, based on the research we have prepared, and to make a proposal for its practical implementation. In connection with the dual brand, we have set up several hypotheses, which were verified in the thesis. For example, that the students who are working at the company would have a need to create such a brand and would be happy to show their belonging to the company by wearing a dual uniform.

To prove our hypotheses, we have prepared a market research questionnaire, the target group of which was dual students currently working at the company. After evaluating the answers to the questionnaire, we have verified our assumptions with the help of statistical calculations. After the need became clear, we have gathered information about the possibility of physical implementation.

Our research achieved its goal, because according to the students' opinion, it is necessary to create such an image at the company. At the end of our thesis, based on the results of the research, as the first step of practical implementation, we have prepared a couple of plans for the dual uniform.

Keywords— market research, dual training, uniform, cohesion, merchandising

I. RATIONAL FOR THE CHOICE OF TOPIC

The primary goal of our thesis is to popularize the dual training form [1], and we present the results of our research as a means of this. Harman Becker Automotive Manufacturing Ltd. (Figure 2) currently employs 66 students who study at six different universities (Figure 1), so the student body within the company is heterogeneous.



Figure 1 University partners in connection with the company

In order to make the days spent at work easier, the Education Group places great emphasis on strengthening student cohesion and creating a homogeneous Harman student body. As a means of symbolizing this togetherness, I would like to present the dual uniform plan and its implementation process, which I based on the results of the questionnaire We prepared.

II. INTRODUCTION OF THE COMPANY

The parent company Harman International is present on several continents, such as Asia, America, Africa, and Europe.

As the Hungarian subsidiary of Harman Becker Automotive Systems Ltd., has been on the domestic market for 27 years now, it started operating in 1995, and is now known as a stronghold of dual training.



Figure 2 Logo of the company
Source: www.harman.com

The dual partnership is profitable for both the company and the universities. Dual higher education in Hungary enjoys state tax support and is becoming more and more popular among students applying to university. From the company's point of view, acquiring professional staff is an essential part of the long-term strategy. The direct means of this is supporting the studies of students studying in dual education, making offers after graduation, and then employing the students as quickly as possible.

III. THE IMPORTANCE OF UNIFORMS

Our research was conducted among the dual students at Harman, the central theme of which is the promotion of the training by creating a dual brand.

An integral part of this is the creation of a dual "uniform", uniform clothing. Starting from the analogy of university promotional clothing, we conceived the idea that students have a need to express their affiliation [2]. They also like to wear clothes promoting their university or their faculty. The physical projection of the sense of togetherness would also be important within the company, and this can be achieved in the simplest and most spectacular way with the same clothing. In addition to university uniforms, many organizations still use uniforms today (Figure 3) [3].



Figure 3 Figure Different uniforms nowadays [4]

After assessing the needs of the students, they clearly consider it a good idea, and they would like to create and introduce such an image at the company. Of course, wearing the dual uniform would not be mandatory for students working at the company, we would like them to proudly wear the designed garments and use the accessories. The "uniform" would not only manifest itself in functional clothing, but we have also listed several accessories among the options, which are useful in everyday life, but can still be part of the brand. Everyone knows the classic festival promotional products, such as hats, sunglasses, mugs, glasses, water bottles, pens, or stress balls.

From now on, let's consider the dual students as consumers who form the target group of the brand's products. First of all, we have to convince them why this is beneficial for them, since the biggest advertisement for the company is satisfied students, who become influencers (Figure 4) for the future dual students [4].



Figure 4 An influencer

Source: <https://marketingsoul.hu/irasaink/elolvasom/te-tudod-hogy-mi-az-influencer-marketing-60>

IV. DUAL UNIFORM AS AN IMAGE CAMPAIGN

Image campaigns do not promote the specific product or its positive qualities, the focus here is on the brand itself. In this case, the brand, Harman itself, would be dual training. The best-known tool in our hands is the use of image transfer during such a campaign. We want to create non-descriptive advertising, on the contrary. Our goal is relationship-building communication. We want to embed in the public consciousness the clear connection between the attribute and the brand. This is image transfer (Figure 5). In this case, the attribute is the dual training itself, while the "brand" is Harman. The logic used by image transfer goes back to the basic logical relationship used during programming, the inference logic if-then [5].

IF this attribute (IF dual training)	→	THEN this brand (THEN Harman)
↑	↺ ↻ ↻ ↻	↓
THEN this attribute (THEN dual training)	←	IF this brand (IF Harman)

Figure 5 If-then logic for image transfer

V. MARKET RESEARCH WITH QUESTIONNAIRE

University major	Years																			
	2016		2017		2018		2019		2020		2021		2022		2023		2024		2025	
	I.	II.	I.	II.	I.	II.	I.	II.	I.	II.	I.	II.	I.	II.	I.	II.	I.	II.	I.	II.
Electric engineer																				
Mechanical, Mechatronics engineer																				
Technical manager																				
IT engineer																				
Finance and Accounting																				
Economy																				
Human Resources																				

Figure 6 Distribution of dual students at the company

The above table shows the distribution of students according to their university majors (Figure 6), as well as the expiration date of their training period. We created a 10-question questionnaire [6] for dual students, which was completed by 64 people, thus the completion rate is 96.97%. Below we present the evaluation of the responses to the questionnaire and their results, followed by stochastic relationship analyses, which prove that it is necessary to create a dual image at the company. In the following, we will support the motivational effect associated with the creation of the dual brand with the results of the questionnaire.

A. Question #1

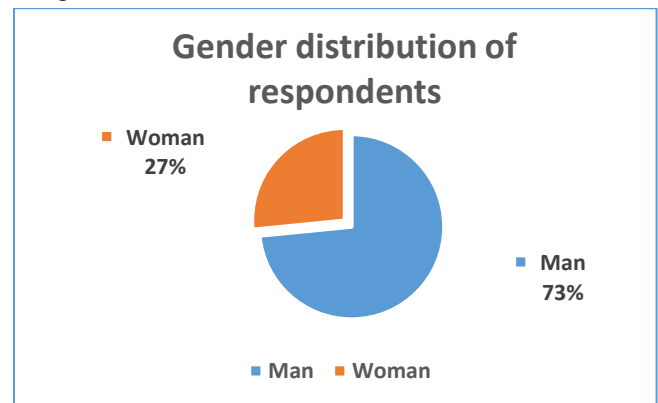


Figure 7 Gender distribution of respondents

The first and perhaps most important question referred to the gender distribution of the respondents (Figure 7). Considering the profile of the company, we can assume that fewer female students are employed by a company with a technical orientation. Based on the questionnaire, this was confirmed, as the gender distribution of the 64 respondents was 17 women and 47 men. So, slightly more than a quarter of the student population is female.

B. Question #2

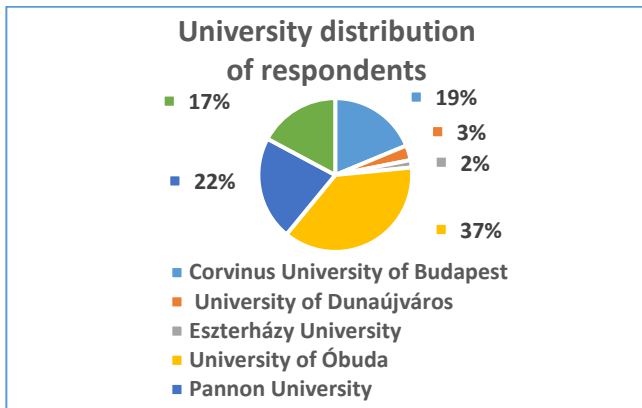


Figure 8 University distribution of respondents

Based on the answers received here, most students (24 people) joined the dual education program in connection with University of Óbuda. On the second place is Pannon University with 14 people, followed by Corvinus University of Budapest with 12 and then the University of Pécs with 11 people. The University of Dunaújváros and the Eszterházy University are also present with a small number of partners, which together represent 5% of the students (Figure 8).

C. Question #3

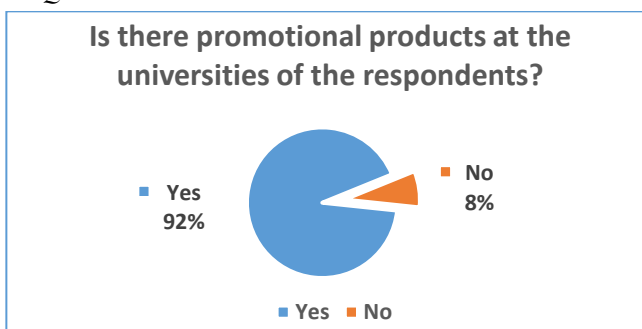


Figure 9 Does the applicants' university have promotional products?

According to 92% of those who filled in, their university has promotional products, the number of those who did not answer was 5 (Figure 9). The explanation for this is that they are probably not aware that such products are available at their university at all. So, all the universities partnering with Harman have promotional products.

D. Question #4

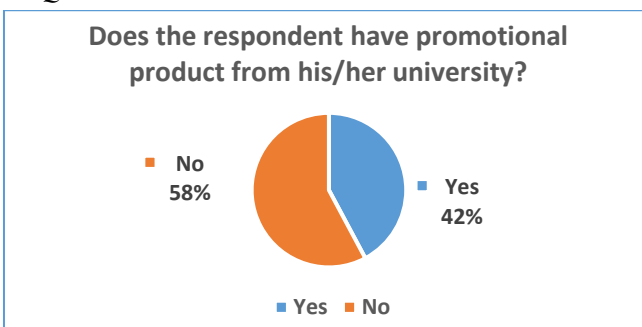


Figure 10 Does the applicant have a product promoting his/her university?

In terms of the number of responses, 27 people wear or use articles promoting their university/major. Unfortunately, non-respondents are in the majority (Figure 10), which is probably explained by the cost implications of these products since they can mostly be purchased at universities through online shops. It would certainly be motivating for most students to have access to such articles for free.

E. Question #5

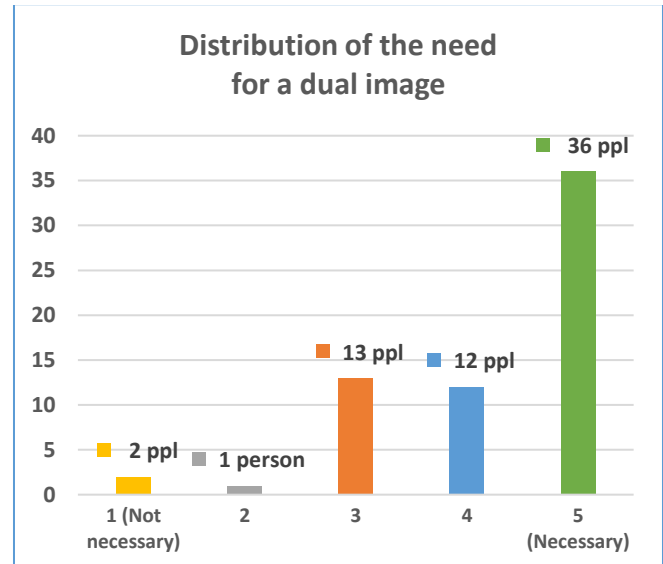


Figure 11 Do you think it would be necessary to create such a promotional image for students at Harman as well?

The answers showed (Figure 11) that the research made sense, as there was mostly positive feedback about the idea. Out of the 64, 48 gave a rating of four and five, and 13 gave a neutral answer.

F. Question #6

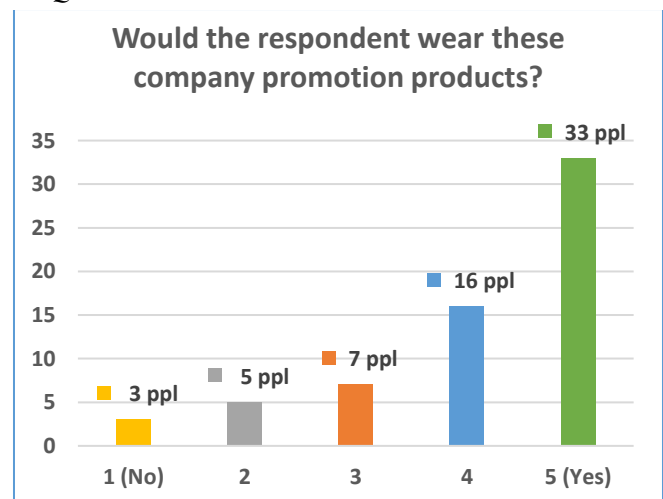


Figure 12 Would You wear these products?

From this diagram (Figure 12), we can read that most students would wear Harman's dual brand products, a total of 49 people out of 64, which is 76.56%. 7 students abstained, 3 refrained from wearing it.

G. Question #7

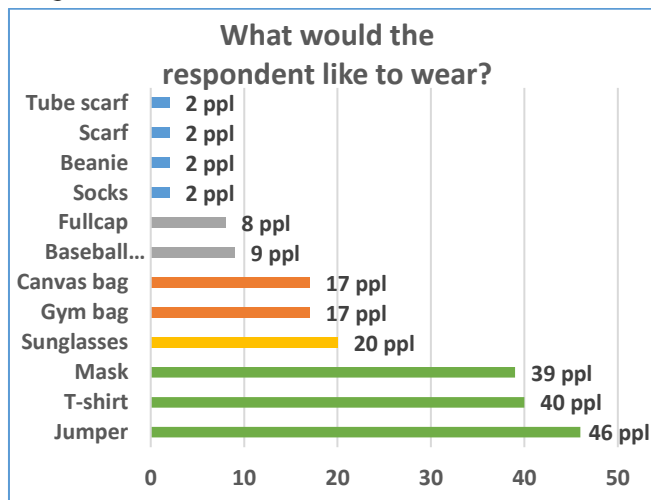


Figure 13 What would you like to wear?

Among the answers I gave in advance, the sweater, T-shirt and mask became the most popular (Figure 13). However, the students also expanded the range with their own creative ideas, there would be demand for socks, beanie hats and different scarves among the products of the dual brand.

H. Question #8

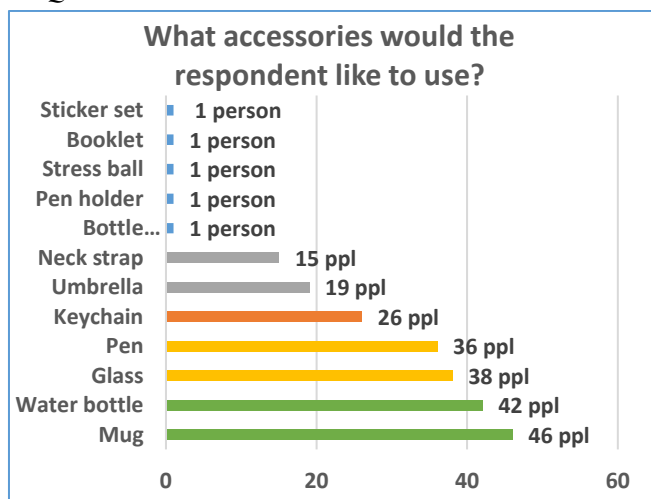


Figure 14 What accessories would you like to use?

In terms of accessories, the three most popular were mugs, water bottles and glasses. Among the answers added by the students were a beer opener, a pen holder, a stress ball, a notebook, and a set of stickers to put on the phone. These products can all be part of the dual product range (Figure 14).

I. Question #9

The company currently has promotional products, but it was important for us to find out what should be on the products so that they not only advertise the company, but also the dual education itself.

In this case, the top three answers were the abbreviation of the university, the #DUAL notation and the student's name options. In addition to these, the people filling in also added the name of the section (e.g.: HR, TEST), Harman word cloud with information about the company (Figure 15).

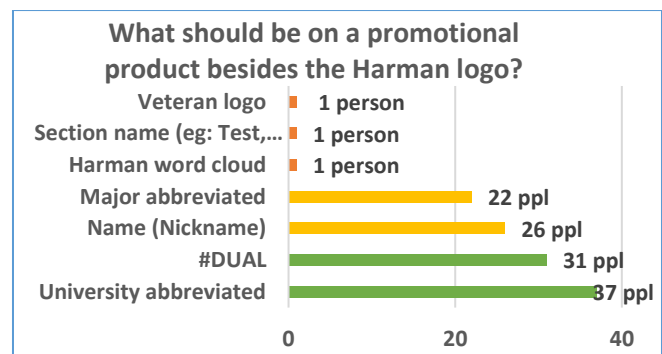


Figure 15 What should be on such a product besides the company logo?

I consider the most creative proposal to be the veteran logo, which would be deserved by the students who have already graduated. It is very positive that the students want to indicate that they once worked at the company in dual training even when they become "veterans". This can have an encouraging effect on the students who are still in training, as they could see how many former students work within Harman's ties even after graduation.

J. Question #10

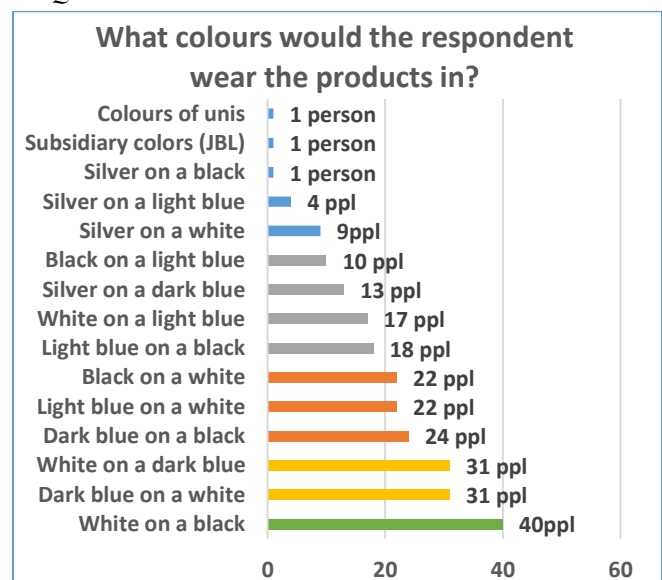


Figure 16 What colors would you like to wear the products in?

When choosing the colours, we combined the colours characteristic of the company, these are dark blue, light blue, white, black, and silver. It is important that the dual brand complements the corporate brand, so we didn't have to think much when choosing the defining colours (Figure 16). A white combination on a practical black base tops the list. There was a tie for second place between the options dark blue on a white background and its opposite, white on a dark blue background, with 31 responses to both. The third place was taken by dark blue on a black background, but we will have to think about this combination later, as it is not certain that the two colours would be able to prevail in relation to each other. Added answers include university and affiliate colours. However, in my opinion, these would not fully fit in to achieve the desired effect, since the university colours are used in the products distributed by the student's university.

VI. RESULTS OF STOCHASTIC RELATIONSHIP ANALYSIS

Based on the data extracted from the questionnaire related to dual image building, we examined 3 association relationships using the tools of stochastic relationship analysis. [7] Yule and Chuprov association coefficients were used to measure the closeness of the associations. In the case of stochastic relationship analyses, the y value must fall between 0 and 1, closeness between 0-0.3 is weak, between 0.3-0.7 is medium and between 0.7-1 is strong.

A. First hypothesis

In the first round, we examined to what extent the gender of the respondents is related to whether they have products that promote their university (Figure 17). We used the premise that these products are more popular among female fillers, however, the calculation below (Figure 18) shows that there is no strong relationship between gender and disposition.

Gender \ Ownership	Have	Does not have	Σ
Female	9	8	17
Male	18	29	47
Σ	27	37	64

Figure 17 The relationship between gender and disposition

Calculated from the values in the table above, we obtained the coefficient shown below:

$$y = \frac{f_{11} * f_{22} - f_{12} * f_{21}}{f_{11} * f_{22} + f_{12} * f_{21}}$$

$$y = \frac{9 * 29 - 8 * 18}{9 * 29 + 8 * 18}$$

$$y = 0,28$$

Figure 18 Application of Yule's association coefficient

As a result of the calculation, we can see that there is no close relationship between the investigated parameters.

Based on the values obtained here, it can be stated that there is a weak relationship between gender and provision among the respondents. This way we know that students prefer the products regardless of their gender.

B. Second hypothesis

University \ Affinity	1	2	3	4	5	Σ
BCE	0	1	5	2	4	12
DUE	0	0	0	0	2	2
EE	0	0	1	0	0	1
ÓE	0	0	5	4	15	24
PE	1	0	1	4	8	14
PTE	1	0	1	2	7	11
Σ	2	1	13	12	36	64

Figure 19 The relationship between university and affinity

Our second hypothesis was that university affiliation and affinity for promoting image are closely related. We examined this relationship with the help of Chuprov's association coefficient, which required the calculation of the marginal frequencies (Figure 20) and the values of the table above (Figure 19).

University	Marginal frequency $N_{ij} = \frac{n_i * n_j}{n}$	Chi value $X = \frac{N_{ij} - N_{ij}^*}{N_{ij}^*}$	University	Marginal frequency $N_{ij} = \frac{n_i * n_j}{n}$	Chi value $X = \frac{N_{ij} - N_{ij}^*}{N_{ij}^*}$
BCE1	$N_{ij} = \frac{2 * 12}{64} = 0,375$	$X = \frac{0 - 0,375}{0,375} = 0,375$	ÓE1	$N_{ij} = \frac{2 * 24}{64} = 0,750$	$X = \frac{0 - 0,750}{0,750} = 0,750$
BCE2	0,188	3,507	ÓE2	0,375	0,375
BCE3	2,438	2,692	ÓE3	4,875	0,003
BCE4	2,250	0,028	ÓE4	4,500	0,056
BCE5	6,750	1,120	ÓE5	13,500	0,167
DUE1	0,063	0,063	PE1	0,438	0,721
DUE2	0,031	0,031	PE2	0,219	0,219
DUE3	0,406	0,406	PE3	2,844	1,196
DUE4	0,375	0,375	PE4	2,625	0,720
DUE5	1,125	0,681	PE5	7,875	0,002
EE1	0,031	0,031	PTE1	0,344	1,251
EE2	0,016	0,016	PTE2	0,172	0,172
EE3	0,203	3,129	PTE3	2,234	0,682
EE4	0,188	0,188	PTE4	2,063	0,002
EE5	0,563	0,563	PTE5	6,188	0,107
Σ Khi=		13,205	Σ Khi=		6,423
Chi ² =19,628					

Figure 20 Marginal frequencies and χ values belonging to the relationship between university and affinity

The X^2 (chi square) value shown in the formula was obtained from the summation of the chi values of the previous table, 'N' means the element number, which can be seen in the lower right corner of the table, which is, by definition, the same as the number of fillers. 's' means the number of rows, in this case we also must consider table number 5, so the value of s is 6, the value 't' indicates the number of columns, which means 5 columns in the table. This is how the following formula (Figure 21) is composed, from which the Cuprov association coefficient can be calculated:

$$T = \sqrt{\frac{X^2}{N * \sqrt{s-1} * \sqrt{t-1}}}$$

$$T = \sqrt{\frac{19,628}{64 * \sqrt{6-1} * \sqrt{5-1}}}$$

$$T = 0,262$$

Figure 21 Application of Chuprov's association coefficient

In this case too, the value falls between 0 and 0.3, thereby proving that there is a weak relationship between university affiliation and the affinity of creating an image that promotes the company. Therefore, we cannot say that, for example, only the students of Óbuda University would support the creation of a dual image, since we can conclude from the calculation that the students at the different universities all support the image plan.

C. Third hypothesis

And finally, but not least, we would like to show with another association study the strength of the relationship between the gender of the participants and the willingness to wear the products of the dual image (Figure 22).

Again, we used the premise that female fillers would prefer to wear products related to the dual image or would prefer to use the tools of the image. In this case, too, the calculation was performed using the Chuprov association coefficient.

Gender \ Affinity	1	2	3	4	5	Σ
Women	1	2	2	5	7	17
Men	2	3	5	11	26	47
Σ	3	5	7	16	33	64

Figure 22 Relationship between gender and affinity

To calculate the coefficient, it is necessary to calculate again the marginal frequencies and values of the above table, which can be seen in the table below (Figure 23):

	Marginal frequency	Chi value
Female1	0,797	0,052
Female2	1,328	0,340
Female3	1,859	0,011
Female4	4,250	0,132
Female5	8,766	0,356
Male1	2,203	0,019
Male2	3,672	0,123
Male3	5,141	0,004
Male4	11,75	0,048
Male5	24,234	0,129
$\text{Chi}^2 = \Sigma \text{Khí}$		1,214

Figure 23 Marginal frequencies and χ values for the relationship between gender and affinity

By calculating the coefficient (Figure 24), there is a weak relationship in this case as well. In this way, we can state that there is no clear connection between gender and the wearing of promotional products. So, we can't say that the products of the dual image are worn only by female fillers, and male avoid them.

$$T = \sqrt{\frac{X^2}{N * \sqrt{s-1} * \sqrt{t-1}}}$$

$$T = \sqrt{\frac{1,214}{64 * \sqrt{2-1} * \sqrt{5-1}}}$$

$$T = 0,097$$

Figure 24 Application of Chuprov's association coefficient II.

Based on the calculations, it can be concluded that the corporate students support the introduction of promotional products, they would wear and use them, regardless of gender or university.

VII. FROM IDEA TO IMPLEMENTATION

We talked about the implementation of the idea with a Sr. HR Manager of the company, in which we were informed about the design and production process of the current corporate uniform. About their ordering process and the possibility of introducing a dual brand. We then made a couple of sketches of the dual uniform (Figure 25 and Figure 26).



Figure 25 Plan of dual promotional products I.



Figure 26 Plan of dual promotional products II.

VIII. SUMMARY

At the end of our scientific student thesis, we managed to present our research in accordance with our objective, which is worthy of promoting the dual education and the Harman company. With our article, we want to show that it is not enough to win over students before admission, but that it is necessary to constantly maintain their interest and create a sense of community within the company. The results of our research proved to be useful for the company as well, as the Education Group works hard to recruit students. The uniform appearance also lends credibility at the open days, and the individual signs would facilitate the recruitment process. Our research is also useful for the university, as they see that their students spend their days at the company in an environment where they receive sufficient support.

SOURCES:

- [1] "Óbudai Egyetem AMK Duális Képzés," [Online]. Available: <http://amk.uni-obuda.hu/index.php/hu/felvetelizoknek/dualis-kepzes>.
- [2] N. Goldschmied, P. Furley and R. Bush, "Taylor&Francis Online - Critical review of uniform color effects in sports," [Online]. Available: <https://www.tandfonline.com/doi/full/10.1080/1750984X.2020.1855668>.
- [3] "Profession.hu - Egyenruhák világa: földön, vízen, levegőben," [Online]. Available: <https://www.profession.hu/cikk/egyenruhak-vilaga-foldon-vizen-levegoben>.
- [4] "Marketing Soul," [Online]. Available: <https://marketingsoul.hu/irasaink/elolvasom/te-tudod-hogy-mi-az-influencer-marketing-60>.
- [5] I. Sas, Reklám és pszichológia a webkorszakban - Upgrade 3.0, Kommunikációs Akadémia, 2012.
- [6] Z. F. Pretz, "_Duális_ arculatépítés," [Online]. Available: https://docs.google.com/forms/d/1ochRXgW_oMIOAUWjdSapJjp5yZ-x3mpS_alV2Q7tjGE/edit.
- [7] L. Kóczy Á., "Statisztika I. - 4. előadás – Kombinációs táblák elemzése," [Online]. Available: <https://uni-obuda.hu/users/koczy/letolt/stat1-7.hu.pdf>.
- [8] "Google Képek - Egyenruha," [Online]. Available: https://www.google.com/search?q=egyenruha&tbm=isch&ved=2ahUKEwjR9sOz1cX2AhXRRcAKHcU9AJcQ2-cCegQIABAA&oq=egyenruha&gs_lcp=CgNpbWcQAzIHCCMQ7wMQJzIHCCMQ7wMQJzIFCAAQgAQyBQgAEIAEMgUIABCABDIGCAAQBRAeMgYIABAFEB4yBggAEAUQHjIGCAAQBRAeMgYIABAFEB46CAgAELEDEIMBOgsIAB.
- [9] "Harman Akadémia - Általános dokumentumtár," [Online]. Available: <http://moodle.harman.com/>.
- [10] "Pólómánia - Pólótervező," [Online]. Available: https://polomania.hu/polotervezo?gclid=CjwKCAjwxZqSBhAHEiwASr9n9FZd6o5Mn8VfWbPxY3y7H2MH0PVI8UHRxKaKIaC0J6liHoXHBnusrqBoCyaWQAvD_BwE.
- [11] "Textsite.info - Egyenruha definíciója," [Online]. Available: <http://hu.textsite.info/Egyenruha>.
- [12] G. Kaszás, Reklámcsinálás - A kis adrenalinjáték, S. Péter, Ed., Budapest: HVG Kiadó Zrt., 2014.
- [13] B. Krenn, "Semantic Scholar - The effect of uniform color on judging athletes' aggressiveness, fairness, and chance of winning.," [Online]. Available: <https://www.semanticscholar.org/paper/The-effect-of-uniform-color-on-judging-athletes%27-of-Krenn/48780a4d4ad46e2619ad56f3db14554f9af85ed3>.