

EVALUATION OF A POPULAR SHOPPING MALL BUILT TO ACCOMMODATE PREVIOUS STREET VENDORS IN DOWNTOWN PORTO ALEGRE

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Abstract

The objective of this paper is to evaluate a popular shopping mall, named the CPC, focusing on its location, use, aesthetics and security. The global and local integration values of streets surrounding the CPC and the former Square XV Camelódromo are compared in order to evidence their level of accessibility. Concerning use, the following specific objectives are investigated: retailers' and CPC users' preference for a popular shopping mall type and CPC users' knowledge and shopping routines in the former Square XV Camelódromo; retailers' and CPC users' levels of satisfaction with the CPC, evaluations of the CPC building and shops location regarding sales, assessments of the existence of a food court and a bus terminal in the CPC building. In relation to aesthetics, retailers' and CPC users' evaluations of the internal appearance of the CPC, and retailers', CPC users' and architects' assessments of the external appearance of the CPC are revealed. Moreover, retailers' and CPC users' evaluations of security in the bus terminal in the CPC building and in downtown Porto Alegre are identified. Data gathering methods included archival surveys, physical measurements, behavioral observations, and questionnaires. Data were analyzed through non-parametric statistical tests and space syntax methods. Results corroborate findings of other studies regarding the need for movement of people and visibility of shops at ground level, in order to achieve a satisfactory sales performance. Moreover, the CPC external appearance tends to be differently evaluated among retailers, CPC users and architects.

Keywords: Shopping Mall; Location; Use; Aesthetics; Security.

INTRODUCTION

Informal street trade in Brazilian cities has been a concern to local governments due to its competition with nearby formal business and its obstruction of movement of people in the public spaces (Rigatti, 2003). Thus, in order to remove street vendors from downtown public spaces the implementation of popular shopping malls has been among the goals of redevelopments of urban areas in several Brazilian cities such as Porto Alegre, Belo Horizonte, Fortaleza and Joao Pessoa (Prefeitura Municipal de Joao Pessoa, 2010; Neves, Jayme, Zambellini, 2006; Dantas, 2005). Similarly, local governments of cities such as New York and Bogota have relocated street vendors to liberate public spaces for pedestrian circulation (p. ex. Donovan, 2008, 2002; Ya-Ting Liu, 2007; Devlin, 2006).

In order to achieve a successful outcome, such street vendors relocations and the consequent change of their condition to retailers in the new developments must consider shopping requirements (Zambellini, 2006). Shops need to be located in areas with a significant flow of people and/or activities that provide social gathering, as demand for products that are not basic necessities, such as toys and electronic equipments, depends on the opportunities created by meetings (Vargas, 2001; Rigatti, 2003). The less needed the products are, the more strategies are needed to encourage occasional purchases made by impulse. In this sense, a former study already emphasized the importance of shop location in order to reach as many customers as



possible and increase sales (Lay and Oliveira, 2007). Early research shows that shops tend to be located along the most spatially integrated (accessible) streets (Hillier et al., 1993) and in streets with a high degree of connectivity to nearby streets (Hillier, 1999). Additionally, sales also depend on adequate visibility of the shops and on buildings configurations that do not divide the flow of customers (Vargas, 2001).

Nonetheless, distinct buildings configurations and locations were used in Brazilian cities to accommodate former street vendors. The local government of Belo Horizonte used an old brewery to relocate street vendors in the new Oiapoque Shopping (Figures 1 and 2). Shops were distributed on two floors and in the building courtyards and a public transport terminal was built to attract more people to the Shopping (Zambellini, 2006). The original building configuration and direct relationship with the public open spaces have been preserved, allowing pedestrians to visualize the shops.



Figure 1. View of Oiapoque Shopping. (Source: Google Earth, 2014).



Figure 2. Access to Oiapoque Shopping. (Source: Google Earth, 2014).

In others Brazilian cities, such as Porto Alegre and Joao Pessoa, new buildings were specifically designed to accommodate previous street vendors. Varadouro Shopping Center (Figure 3), located near a bus station in Joao Pessoa, consists of a two storey building with shops distributed on each floor (Prefeitura Municipal de Joao Pessoa, 2010). The configuration of a popular

shopping mall in Porto Alegre (CPC – ‘Centro Popular de Compras’), in turn, shows two blocks, three storeys high, connected by covered walkways crossing over Julio de Castilhos Avenue, with shops located on the second floor (Figures 4, 7,8 and 14).



Figure 3. Varadouro Shopping. (Source: Google Earth, 2011).



Figure 4. CPC. (Source: Celina de Pinho Barroso, 2009).

So far, however, no conclusive evidences from studies regarding the location, use, aesthetics, and security of buildings with different configurations used to accommodate previous street vendors, were found. This applies to the Popular Shopping Mall (CPC) in Porto Alegre, although press reports (Zero Hora, 2009a; Zero Hora, 2009b; Daroit, 2009) pointed out several problems, such as poorly built construction of buildings, tenants' arrears, small number of customers and

occurrence of vandalism. Moreover, it is not known if the CPC distinct downtown location comparing to the former Square XV Camelódromo location (the early street vendors area; Figure 5) may have had any effect on movement of people and sales in the CPC.



Figure 5. Square XV Camelódromo – former main location of street vendors in downtown Porto Alegre, before the construction of the CPC. (Source: Celina de Pinho Barroso, 2009).

Therefore, the objective of this paper is to evaluate the popular shopping mall in downtown Porto Alegre, namely the CPC ('Centro Popular de Compras' - Popular Shopping Mall; Figure 4), focusing on its location, use, aesthetics and security. Regarding location, the global and local integration values of streets surrounding the CPC and the former Square XV Camelódromo (Figure 11) are compared in order to evidence their level of accessibility. Concerning use, the following specific objectives are investigated: retailers' and CPC users' preference for a popular shopping mall type and CPC users' knowledge and shopping routines in the former Square XV Camelódromo; retailers' and CPC users' levels of satisfaction with the CPC; retailers' and CPC users' evaluations of the CPC building and shops location regarding sales; retailers' and CPC users' assessments of the existence of a food court in the CPC; and retailers' and CPC users' evaluations of the incorporation of a bus terminal to the CPC building. In relation to aesthetics, retailers' and CPC users' assessments of the internal appearance of the CPC, and retailers', CPC users' and architects' appraisals of the external appearance of the CPC are revealed. Moreover, retailers' and CPC users' evaluations of security in the bus terminal, in the CPC building and in downtown Porto Alegre are identified.

METHODOLOGY

The object of this study, a popular shopping mall (CPC) located in a busy downtown area in Porto Alegre (Figure 6), characterized by services and commerce, was licensed by the Local Department of Industry and Commerce and inaugurated on February 9th, 2009. The CPC intended to accommodate 800 former street vendors previously working at the Square XV Camelódromo (Figure 6), also located in the city center of Porto Alegre. The building has an area of 20,000 m² (twenty thousand square meters), constituted by two blocks (A side and B side) divided in three floors: in the ground floor (Figure 7) there is a bus terminal for more than 50 bus lines and by the time of this investigation there were 28 city bus lines on A side and 21

metropolitan lines on B side; in the second floor (Figure 8) there are shops (rented to retailers that were previous street vendors), a food court and other services; and the third floor is constituted by 216 parking spaces, a restaurant and the administration sector (Prefeitura Municipal de Porto Alegre, 2009).



Figure 6. Location of CPC and the former Square XV Camelódromo (main location of street vendors in downtown Porto Alegre, before construction of the CPC). (Source: Adapted from Google Earth by Celina de Pinho Barroso).

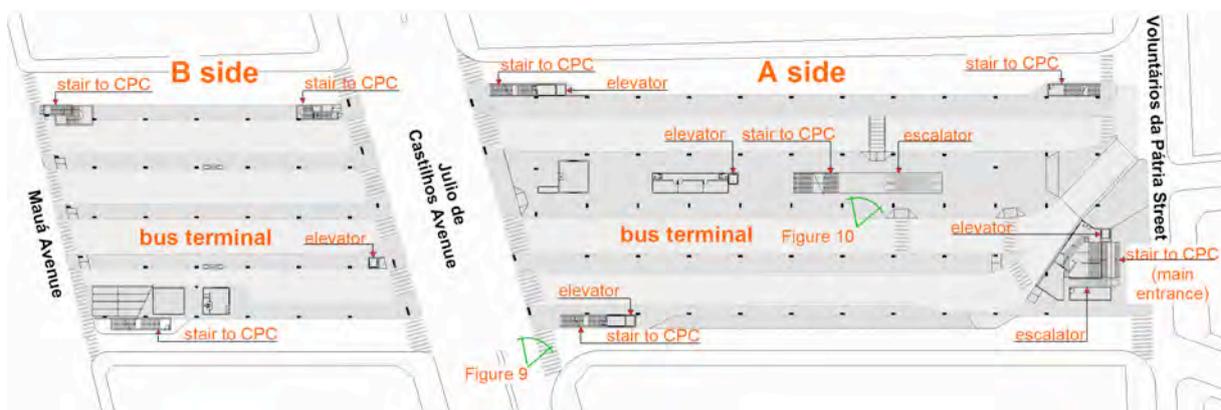


Figure 7. CPC ground floor plan. (Source: Adapted from Prefeitura Municipal de Porto Alegre, 2009).

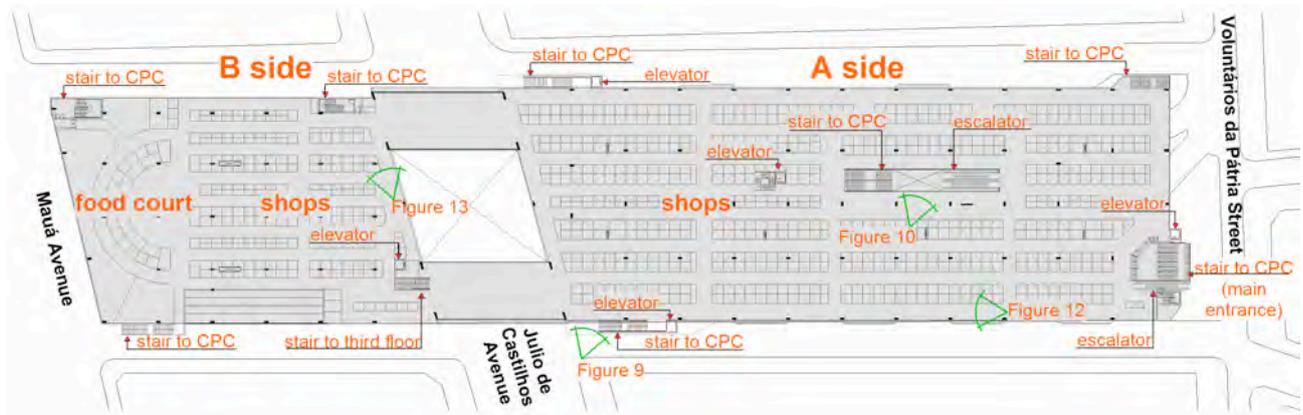


Figure 8. CPC second floor plan. (Source: Adapted from Prefeitura Municipal de Porto Alegre, 2009).

The access to the shops located on the second floor of the CPC occurs via stairs (Figures 7 and 9), escalators (Figures 7 and 10) and elevators; there are six staircases (five on A side and one on B side), two escalators on A side and five elevators (four on A side and one on B side; Figures 7 and 8). Universal accessibility for people with disabilities and reduced mobility is provided by the five elevators.

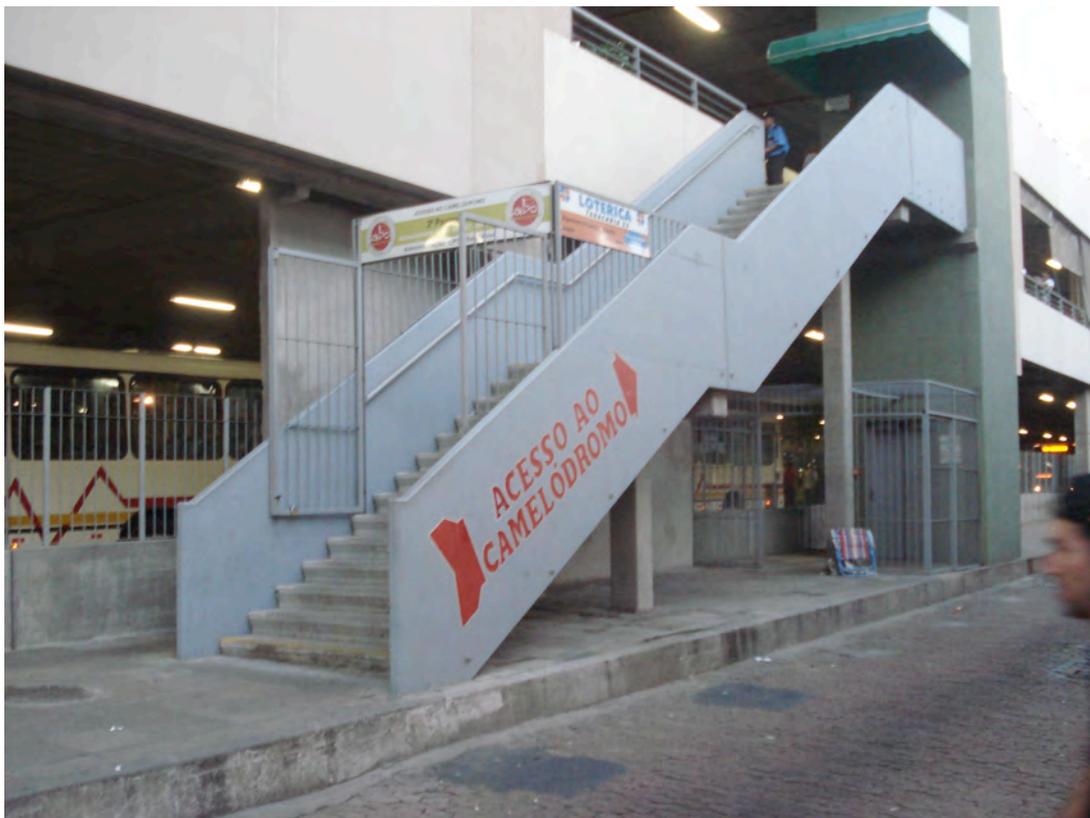


Figure 9. External access to the shops on A side. (Source: Author, 2009).



Figure 10. Access to the shops on A side by the bus terminal. (Source: Author, 2009).

Physical measurements, archival surveys, and behavioral observations were carried out, and questionnaires were administered to a sample of 128 respondents (Table 1), by the end of October and beginning of November 2009, nine months after the inauguration of CPC. Visits were made to the CPC during the morning of 22nd October in order to apply a pilot questionnaire. The final questionnaires were specific for each of the four groups (Table 1) and were applied during mornings and afternoons of the 29th and 30th October and morning of 5th November 2009 to CPC users (customers of shops and food court, and users of the bus terminal) and retailers. During this period questionnaires were also applied to architects at the Faculty of Architecture (UFRGS – Federal University of Rio Grande do Sul), at Porto Alegre City Council, and to city center users.

Table 1: Groups, subgroups and number of the respondents (Source: Author, 2012).

GROUPS	SUBGROUPS	NUMBER OF THE RESPONDENTS	TOTAL
Retailers (previous street vendors)	Retailers A side	17	31
	Retailers B side	14	
CPC users	Customers of shops	11	32
	Customers of food court	11	
	Users of the bus terminal	10	
Architects		33	33
City center users		32	32
TOTAL		128	128

Questionnaires including questions related to all the investigated variables were applied to retailers and CPC users; questionnaires with questions related to CPC external appearance were applied to architects and questionnaires with questions about shopping in the CPC and in the former Square XV Camelódromo were applied to city center users.

The external appearance of the CPC was evaluated considering the view from Julio de Castilhos Avenue - View 1 (Figure 14) and by comparison to a simulated view from the same observation point excluding the CPC building - View 2 (Figure 15), since these views reveal the major aesthetic impact produced by the CPC on the urban landscape. The quantitative data from the questionnaires were analyzed in SPSS (Statistical Package for the Social Sciences).

Nonparametric statistical tests such as Mann-Whitney U, Kruskal-Wallis and Spearman were performed with groups of respondents with, at least, 30 subjects (Table 1), which is considered an acceptable sample size to carry out nonparametric statistical tests [e.g. Reis, 1992, referring to Leedy's (1989) considerations].

Space syntax analysis was used in order to reveal location attributes through the global (considering all the other lines from each line in the urban system; in this case, the axial map of Porto Alegre) and local (considering only two steps, or two lines, from each line in the system) integration values of axial lines giving access to CPC and to the former Square XV Camelódromo. Higher integration values mean higher accessibility whereas lower integration values mean lower accessibility or higher segregation (Hillier and Hanson, 1984).

RESULTS AND DISCUSSION

Following the objectives, results are shown according to the main aspects of location, use, aesthetics and security.

Location - CPC and the former Square XV Camelódromo level of accessibility

In order to evidence their level of global accessibility, a comparison between the global integration values of streets giving direct access to CPC and to the former Square XV Camelódromo shows that these values are very similar, indicating a high level of accessibility in the urban system of Porto Alegre in both cases (Table 2; Figure 11). Moreover, although both are highly locally integrated, lines giving direct access to the CPC are slightly more locally integrated than those giving direct access to the former Square XV Camelódromo. This indicates that the first is a bit more accessible in downtown Porto Alegre than the second, suggesting that the location of CPC is very similar to the former Square XV Camelódromo in terms of being benefited by the movement of people (Table 2).



Figure 11. Axial map of CPC and former Square XV Camelódromo. (Source: Google Earth; axial map by Fábio Lúcio Zampieri, 2015).

Table 2: Global and local integration values of axial lines giving access to CPC and to former Square XV Camelódromo (Source: Author, 2015).

Line number	Street name	Global Integration	Local Integration R2
LINES GIVING DIRECT ACCESS TO CPC			
13803	Rui Barbosa Square	0,41752291	3,2369771
13804	Rui Barbosa Square (1)	0,41101205	2,8957148
13870	Mauá Avenue	0,41580322	4,5189767
13938	Senhor dos Passos Street	0,42479992	3,8564856
13941	Dr. Flores Street	0,4294745	4,120677
14199	Julio de Castilhos Avenue	0,4113082	4,605505
14200	Voluntários da Pátria Avenue	0,42542589	4,514534
Mean values		0,41933524	3,96412431
LINES GIVING DIRECT ACCESS TO FORMER SQUARE XV CAMELÓDROMO			
13940	Otávio Rocha Street	0,41462445	3,0307732
14196	Marechal Floriano Street	0,41774726	3,9872499
14197	Pereira Parobe Square	0,41047582	2,208734
14200	Voluntários da Pátria Avenue	0,42542589	4,514534
14201	Quinze de Novembro Square	0,40465194	2,3684211
14202	Jose Montauray Street	0,41892192	2,8350682
14205	Marechal Floriano Street	0,42969987	5,0405025
14254	Montevideo Square - Quinze de Novembro Square	0,4194065	5,3495517
Mean values		0,417619206	3,66685432

Use – Retailers’ and CPC users’ preference for a popular shopping mall type and CPC users’ knowledge and shopping routines in the former Square XV Camelódromo

Considering the former Square XV Camelódromo, the CPC and other type of a popular shopping mall specified by the respondent, 92.96% of CPC users (27 out of 29) prefer the CPC (Table 3). The main reasons are the sheltered space of the building (40.7% - 11 out of 27), organization (33.3% - 9 out of 27) and security (18.5% - 5 out of 27). The clear preference of users for the CPC demonstrates the importance of having adequate space for shopping with protection from the weather, organized and safe. However, when questioned about types of popular shopping malls, many respondents were unable to think about any other type apart from the CPC itself.

Table 3: Preference for a popular shopping mall type including the CPC and the former Square XV Camelódromo (Source: Author, 2015).

	retailers A side	retailers B side	retailers (total)	customers of shops	customers of food court	bus terminal users	CPC users (total)
total	15 (100%)	14 (100%)	29 (100%)	10 (100%)	10 (100%)	9 (100%)	29 (100%)
Camelódromo	8 (53.3%)	4 (28.6%)	12 (40.9%)	0	0	1 (11.1%)	1 (3.7%)
CPC	6 (40.0%)	3 (21.4%)	9 (30.7%)	10(100%)	9 (90.0%)	8 (88.9%)	27(92.96)
Shop in square	1 (6.7%)	2 (14.3%)	3 (10.5%)	0	0	0	0
Square Ughini	0	1 (7.1%)	1 (3.55%)	0	0	0	0
CPC ground floor	0	2 (14.3%)	2 (7.15%)	0	0	0	0
On the street	0	2 (14.3%)	2 (7.15%)	0	0	0	0
None	0	0	0	0	1 (10%)	0	1 (3.33%)

Nonetheless, the expressive majority of CPC users (90.6% - 29 out of 32) knew the former Square XV Camelódromo and 65.6% (21 of 32) used to shop there (Tables 4 and 5). Therefore, most CPC users were able to compare the CPC and the Square XV Camelódromo.

Table 4: Knowledge about the Square XV Camelódromo (Source: Author, 2015).

	customers of shops	customers of food court	bus terminal users	CPC users (total)
total	11 (100%)	11 (100%)	10 (100%)	32 (100%)
yes	10 (90.9%)	10 (90.9%)	9 (90.0%)	29 (90.6%)
no	1 (9.1%)	1 (9.1%)	1 (10.0%)	3 (9.4%)

Table 5: Shopping in the former Square XV Camelódromo (Source: Author, 2015).

	customers of shops	customers of food court	bus terminal users	CPC users (total)
total	10 (100%)	10 (100%)	9 (100%)	29 (100%)
yes	8 (80.0%)	9 (90.0%)	4 (44.4%)	21 (71.4%)
no	2 (20.0%)	1 (10.0%)	5 (55.6%)	8 (28.5%)

On the other hand, only 30.7% (9 out of 29) of the retailers (former street vendors at Square XV Camelódromo) prefer the CPC, while 40.9% (12 out of 29) prefer the former Square XV Camelódromo (Table 3) due to higher sales (75% - 9 out of 12), direct access from nearby streets (33.3% - 4 out of 12) and the presence of more people (33.3% - 4 out of 12). The main reasons for the preference for the CPC are security (66.7% - 6 out of 9), a better ambience (44.4% - 4 out of 9) and organization (33.3% - 3 out of 9). Therefore, the main reasons mentioned by retailers to justify preference for the former Square XV Camelódromo reveals the great importance for them of sales number, access and movement of people.

Use – Retailers’ and CPC users’ levels of satisfaction with the CPC

Regarding satisfaction with the CPC in general, a significant percentage of respondents (31.48% - 19 out of 63) considers it unsatisfactory or very unsatisfactory. Nonetheless, a statistically significant difference (Mann-Whitney U, sig.=.000) was found between retailers’ and CPC users’ degree of satisfaction with the CPC. Most retailers (56.30% - 17 out of 31) were dissatisfied or very dissatisfied, while the clear majority (90% - 29 out of 32) of CPC users (customers of shops, customers of food court and users of the bus terminal) evaluated the CPC as satisfactory or very satisfactory (Table 6). Hence, these results are consistent with retailers’ and CPC users’ preference for a popular shopping mall type.

Table 6: Degree of satisfaction with the CPC (Source: Author, 2015).

GROUPS	v.sat.	sat.	n.n.	dis.	v.dis.	m.r.	Total
Retailers A side	0	6 (35,3%)	4 (23,5%)	3 (17,6%)	4 (23,5%)	-	17
Retailers B side	0	0	4 (28,6%)	6 (42,9%)	4 (28,6%)	-	14
Customers of shops	4 (36,4%)	7 (63,6%)	0	0	0	-	11
Customers of food court	2 (18,2%)	9 (81,8%)	0	0	0	-	11
Users of bus terminal	0	7 (70%)	1 (10%)	2 (20%)	0	-	10
Retailers - total	0	6 (17,65%)	8 (26,05%)	9 (30,25%)	8 (26,05%)	19,74	31
Users of CPC - total	6 (18,2%)	23 (71,8%)	1 (3,33%)	2 (6,66%)	0	43,88	32

Note. v.sat.= very satisfied; sat.= satisfied; n.n.= neither satisfied nor dissatisfied; dis.= dissatisfied; v.dis.= very dissatisfied; m.r.= mean rank values obtained through Mann-Whitney U non-parametric statistical test considering the group of retailers (31) and the group of CPC users (32).

Retailers’ opinions reflect their knowledge about the CPC as a result of their daily experience and long stay in the shops during the day in different seasons of the year. However, retailers near the main entrance to the building on A side (Figure 8) are less dissatisfied with the CPC (41.1% dissatisfied or very dissatisfied - 7 out of 17) than the retailers on the B side (71.5% dissatisfied or



very dissatisfied - 10 out of 14). The number and location of alternative entrances to the CPC (on the second floor of the building) generate differences in the number of customers in A and B sides, greater in A side as observed during visits to the CPC. So, this may justify the existing difference in the degree of satisfaction between retailers in A and B sides. While A side has eleven points of access (Figures 7 and 8), with escalator (Figure 8), staircases (Figures 7 and 8) and elevator, B side has only two, of which one access occurs via staircase when entering from Maua Avenue and the other access is via elevator adjacent to Julio de Castilhos Avenue (Figures 7 and 8).

Although CPC users are much more satisfied with CPC than the retailers (Table 6), according to the responses of 32 City Center users the number of these who usually buy in the CPC is 17 % lower than the number that used to buy in the former Square XV Camelódromo, revealing that the first has attracted fewer customers than the second used to attract. Nonetheless, the most mentioned reasons given by customers of shops in CPC are the low price of merchandise (52.3% - 11 out of 21) and the fact that they were passing by (33.3% - 7 out of 21), what supports the importance of location and people moving around a popular shopping to improve sales performance.

Use – Retailers’ and CPC users’ evaluations of the CPC building and shops location regarding sales

According to 81.3% (26 out of 32) of CPC users, the CPC building contributes to sales (Table 7) due to weather protection and comfort (76.9% - 20 out of 26), and safety (26, 9% - 7 out of 26), considered as improvements in comparison to the exposed open space of the former Square XV Camelódromo (Figure 5).

Table 7: Evaluation of the CPC building regarding sales (Source: Author, 2015).

contributes to sales	retailers A side	retailers B side	retailers (total)	customers of shops	customers of food court	users of bus terminal	users (total)
yes	9 (52.9%)	4 (28.6%)	13 (41.9%)	10(90.9%)	8 (72.7%)	8 (80%)	26(81.3%)
no	8 (47.1%)	10 (71.4%)	18 (58.1%)	1 (9.1%)	3 (27.3%)	2 (20%)	6 (18.8%)
total	17(100%)	14 (100%)	31 (100%)	11 (100%)	11 (100%)	10 (100%)	32 (100%)

On one hand, 58.1% (18 out of 31) of the retailers think that the CPC building does not contribute to sales, due to: the difficulty of access and low visibility of the shops located at the second floor (27.7% - 5 out of 18); the fact that shops would be better located at the street level (27.7% - 5 out of 18); and to the thermal discomfort (hot and humid, no cross ventilation) inside the building (16.6% - 3 out of 18). On the other hand, health problem caused by exposure to weather and thermal variations was the major complaint streets vendors’ had regarding the Square XV Camelódromo (Machado, 2003). Nonetheless, despite the protection from the weather in the CPC building, according to many retailers, this feature does not replace the benefits of the being connected to the street regarding amount of people and sales. In total, 80.6% (25 out of 31) of retailers were dissatisfied or very dissatisfied with the sales in the CPC (Table 8). When asked to compare sales in CPC to sales in the former Square XV Camelódromo (Figure 5), 82.5% (18 out of 23) of all retailers and 100% of those located on B side said sales have decreased a lot in the CPC.

As expected, the correlation between the degree of retailers’ satisfaction with the CPC and the degree of retailers’ satisfaction with sales (Spearman, $c=.635$, $sig.=.000$), confirms that satisfaction with sales affects retailers’ satisfaction with the CPC. The main reasons associated with dissatisfaction with sales by retailers are: low movement of people (32% - 8 out of 25); high costs of rent and tax (28% - 7 out of 25); and poor access to shops on the second floor of the CPC (20% - 5 out of 25). This result is in accordance with the evaluations of Oiapoque Popular Shopping Mall in Belo Horizonte which shows that sales tend to be drastically reduced when shops are not on the ground floor (Zambellini, 2003).

Table 8: Retailers' satisfaction with sales in CPC and comparison to sales in the former Camelódromo (Source: Author, 2015).

DEGREE OF RETAILERS' SATISFACTION WITH SALES IN CPC						
	v.sat.	sat.	n.n.	dis.	v.dis.	Total
Retailers A side	0	3 (17,6%)	2 (11,8%)	5 (29,4%)	7 (41,2%)	17
Retailers B side	0	0	1 (7,1%)	4 (28,6%)	9 (64,3%)	14
Retailers - total	0	3 (8,8%)	3 (9,4%)	9 (29,0%)	16 (52,7%)	31(100%)
SALES IN CPC COMPARED TO SALES IN THE CAMELÓDROMO OF SQUARE XV:						
	g. incr.	incr.	n.n.	decr.	g. decr.	Total
Retailers A side	0	2 (14,3%)	2 (14,3%)	1 (7,1%)	9 (64,3%)	14
Retailers B side	0	0	0	0	9 (100%)	9
Retailers - total	0	2 (7,15%)	2 (7,15%)	1 (3,55%)	18(82,5%)	23(100%)

Note. v.sat.= very satisfied; sat.= satisfied; n.n.= neither satisfied nor dissatisfied; dis.= dissatisfied; v.dis.= very dissatisfied; g. incr. = greatly increased; incr.= increased; n.n. = neither increased nor decreased; decr. = decreased; g. decr. = greatly decreased.

Additionally, a statistically significant difference (Mann-Whitney U, sig.=.000) was found between retailers' and CPC users' perception about the convenience of shops location at the second floor (Table 9). Among retailers, 83.3% (25 out of 31) believe that this configuration is unfavorable or very unfavorable to sales. The responses are also in line with newspaper news (Rodrigues, 2009) which revealed that, since the early days of CPC functioning, retailers were not satisfied with its infrastructure and asked for improvements to facilitate access by customers in order to boost sales. According to some retailers, sales decreased more than 50% since they moved from the former location in the streets to the CPC (Rodrigues, 2009), reinforcing previous results. The problem was acknowledged by Local Authority and as an alternative to improve sales in June 2009, the City Council and the CPC Administration took the initiative of changing CPC (Popular Shopping Mall) name to 'Porto Shopping - Camelódromo' (Zero Hora, 2009c) as this name was supposed to convey a better or refined CPC image. However this expectation of attracting more customers to the site did not occur, as revealed by the results of the CPC evaluation.

The percentage of dissatisfied CPC users (25% - 8 out of 32) with this configuration is substantially lower when compared to retailers' dissatisfaction; however, it is still significant the fact that a quarter of the CPC users who answered the questionnaire were dissatisfied with the location of shops on the second floor (Table 9).

Table 9: Evaluation of the location of shops on the second floor regarding sales (Source: Author, 2015).

	m.conv.	conv.	n.n.	inconv.	v.inconv.	m.r.	Total
Retailers A side	0	1 (6,3%)	2 (12,5%)	4 (25%)	9 (56,3%)	-	16
Retailers B side	0	0	2 (14,3%)	2 (14,3%)	10 (71,4%)	-	14
Customers of shops	0	2 (18,2%)	8 (72,7%)	1 (9,1%)	0	-	11
Customers of food court	0	6 (54,5%)	2 (18,2%)	3 (27,3%)	0	-	11
Users of bus terminal	0	5 (50%)	1 (10%)	3 (30%)	1 (10%)	-	10
Retailers (total)	0	1 (3,3%)	4 (13,3%)	6 (20%)	19 (63,3%)	19,37	30
Users of CPC (total)	0	13 (40,6%)	11 (34,4%)	7 (21,9%)	1 (3,1%)	42,88	32

Note. v.conv.= very convenient ; conv.= convenient; n.n.= neither convenient nor inconvenient; inconv.= inconvenient; v.inconv.= very inconvenient; m.r.= mean rank values obtained through Mann-Whitney U non-parametric statistical test considering the group of retailers (30) and the group of CPC users (32).

Use – Retailers' and CPC users' evaluations of the existence of a food court in the CPC

The existence of the food court in the CPC was considered as positive or very positive by 77.65% of respondents (49 out of 63). Among the CPC users, 87.5% (28 out of 32) positively evaluate the existence of places for meals and snacks and 82.1% of these (23 out of 28) mentioned the convenience of these areas as the main reason. However, 43.3% of CPC users (13 out of 30) do

not use the food court and 20% (6 out of 30) used it at most once a week. In turn, 72,7% (8 out of 11) of customers of food court shop at the CPC.

Among the retailers, 67.7% (21 out of 31) consider as positive or very positive the existence of a food court and 58.1% (18 out of 31) assume that these spaces contribute to sales. Moreover, 35.4% of retailers (11 out of 31) understand that the existence of a restaurant and snack bars facilitates their meals and 25.8% (8 out of 31) think that the food court attracts the public, while 12.9 % (4 out of 31) believe these places do not attract the public and do not affect sales. No further explanation was found for retailers in B side being much less satisfied (50% satisfied) with the nearby food court (Figure 8) than the retailers in A side (82.4% satisfied; Table 10). Nonetheless, the existence of correlation between levels of retailers' satisfaction with the existence of the food court and with the CPC (Spearman, $c=.393$, $sig.=.029$), shows that retailers' satisfaction with the CPC is influenced by the existence of places for meals and snacks in the building.

Table 10:Evaluation of the existence of the food court in the CPC (Source: Author, 2015).

	v. positive	positive	n.n.	neg.	v. neg.	m.r.	Total
Retailers A side	7 (41.2%)	7 (41.2%)	3 (17.6%)	0	0	-	17
Retailers B side	2 (14.3%)	5 (35.7%)	6 (42.9%)	0	1 (7.1%)	-	14
Customers of shops	2 (18.2%)	8 (72.7%)	1 (9.1%)	0	0	-	11
Customers of food court	4 (36.4%)	7 (63.6%)	0	0	0	-	11
Users of bus terminal	1 (10%)	6 (60%)	3 (30%)	0	0	-	10
Retailers - total	9 (29%)	12 (38.7%)	9 (29%)	0	1 (3.2%)	30.47	31
Users of CPC - total	7 (21.9%)	21 (65.6%)	4 (12.5%)	0	0	33.48	32

Note. v. positive= very positive; n.n. = neither positive nor negative; neg. = negative; v.neg.= very negative; m.r.= mean rank values obtained through Mann-Whitney U non-parametric statistical test considering the group of retailers (31) and the group of CPC users (32).

Use – Retailers' and CPC users' evaluation of the incorporation of the bus terminal to the CPC building

The strategy of locating the bus terminal at the ground floor of the CPC building might be in accordance with the idea of using the movement of public transport users to promote sales in the CPC. However, it is evident that the terminal operates independently, with almost no visual integration (Figure 10) and with limited physical connection on B side (only one elevator and one stairs) to the shops at the second floor (Figures 7 and 8). Hence, the architectural features appear to explain why only 30% (3 out of 10) of users of the bus terminal purchase goods at the CPC.

In turn, a significant percentage of respondents (28.7% - 18 out of 63) are dissatisfied or very dissatisfied with the incorporation of the bus terminal to the CPC building (Table 6). However, there is a statistically significant difference (Mann-Whitney U, $sig.=.002$) between retailers' and users' levels of satisfaction with such integration. Among the retailers, 38.7% (12 out of 31) are dissatisfied with the integrated CPC building, and 56.6% (17 out of 31) consider that this integration does not contribute to sales. Moreover, 50% (6 out of 12) of dissatisfied retailers consider that it does not attract public and 41.6% (5 out of 12) believe that it would be better if the shops were located at street level. On the other hand, the main reason mentioned by satisfied retailers (35.5% - 11 out of 31) with the integrated CPC building was convenience of having the shops and the bus terminal in the same building (54.5% - 6 out of 11).

Among CPC users, 75% (24 out of 32) are satisfied or very satisfied with the incorporation of the bus terminal to the CPC building (Table 11), the main reason being the convenience of having the shops and the bus terminal in the same building (50% - 12 out of 24). Despite this positive evaluation, 53.1% of CPC users (17 out of 32) do not use the terminal and 9.4% (3 out of 32) use the bus terminal at most once a week.



Table 11: Evaluation of the incorporation of the bus terminal to the CPC building (Source: Author, 2015).

	v.sat.	sat.	n.n.	dis.	v.dis.	m.r.	Total
Retailers A side	1 (5.9%)	8 (47.1%)	5 (29.4%)	1 (5.9%)	2 (11.8%)	-	17
Retailers B side	0	2 (14.3%)	3 (21.4%)	6 (42.9%)	3 (21.4%)	-	14
Customers of shops	3 (27.3%)	4 (36.4%)	1 (9.1%)	3 (27.3%)	0	-	11
Customers of food court	1 (9.1%)	7 (63.6%)	0	2 (18.2%)	1 (9.1%)	-	11
Users of bus terminal	1 (10%)	8 (80%)	1 (10%)	0	0	-	10
Retailers - total	1 (3.2%)	10 (32.3%)	8 (25.8%)	7 (22.6%)	5 (16.1%)	25.27	31
Users of CPC - total	5 (15.6%)	19 (59.4%)	2 (6.3%)	5 (15.6%)	1 (3.1%)	38.52	32

Note. v.sat.= very satisfied; sat.= satisfied; n.n.= neither satisfied nor dissatisfied; dis.= dissatisfied; v.dis.= very dissatisfied; m.r.= mean rank values obtained through Mann-Whitney U non-parametric statistical test considering the group of retailers (31) and the group of CPC users (32).

The impact of the incorporation of the bus terminal to the CPC building on levels of satisfaction with the CPC building is supported by the existence of a correlation between such levels of satisfaction, either in the group of users (Spearman, $c=.378$, $sig.=.033$) or in the group of retailers (Spearman, $c=.378$, $sig.=.036$).

Aesthetics – Retailers’ and CPC users’ evaluations of the internal appearance of the CPC

The internal appearance of the CPC is negatively evaluated by 40.3% (25 out of 62) of the total respondents and no statistically significant difference between the evaluations of retailers and users was found. It was negatively evaluated by 51.6% (16 out of 31) of the retailers and by 29% (9 out of 31) of the total CPC users (Table 12).

Table 12: Evaluation of the internal appearance of the CPC (Source: Author, 2015).

	v. beautiful	beautiful	n.n.	ugly	v. ugly	m.r.	Total
Retailers A side	2 (11.8%)	2 (11.8%)	7 (41.2%)	4 (23.5%)	2 (11.8%)	-	17
Retailers B side	0	2 (14.3%)	2 (14.3%)	6 (42.9%)	4 (28.6%)	-	14
Customers of shops	2 (18.2%)	3 (27.3%)	4 (36.4%)	2 (18.2%)	0	-	11
Customers of food court	1 (9.1%)	2 (18.2%)	4 (36.4%)	2 (18.2%)	2 (18.2%)	-	11
Users of bus terminal	0	3 (33.3%)	3 (33.3%)	2 (22.2%)	1 (11.1%)	-	9
Retailers - total	2 (6.5%)	4 (12.9%)	9 (29%)	10 (32.3%)	6 (19.4%)	27.44	31
Users of CPC - total	3 (9.7%)	8 (25.8%)	11 (35.5%)	6 (19.4%)	3 (9.7%)	35.56	31

Note. v.beautiful=very beautiful; n.n.= neither beautiful nor ugly; v.ugly=very ugly; m.r.= mean rank values obtained through Mann-Whitney U non-parametric statistical test considering the group of retailers (31) and the group of CPC users (31).

The main reasons given by retailers for a negative evaluation of the internal appearance of CPC are: poor construction and the unfinished look of the building (31.5% - 5 out of 16); the lack of color (31.5% - 5 out of 16); the ugly architectural appearance (31.5% - 5 out of 16) and the inadequate appearance for a shopping center (18.7% - 3 out of 16). The poor construction is related to leaks and spills, problems that delayed the opening of the CPC and remained till this investigation was carried out (Zero Hora, 2009a). The absence of color (also pointed out by 4 of the 9 users that evaluated the internal appearance as negative) refers to the fact that the CPC internal walls and roof are in grey of exposed concrete (Figures 12 and 13). Moreover, the inadequate look for a shopping center seems to be related to lack of paint or coating on the walls and floor, to the nonexistence of ceiling and to the exposed electrical and plumbing.

A statistically significant difference (Mann-Whitney U, $sig.=.000$) was found between the evaluations made by retailers and CPC users, specifically regarding the quality of construction and materials used in the CPC. While these aspects were positively evaluated by only 16.1% (5 of 31) of the retailers and negatively evaluated by 61.3% (19 of 31) of them, 67.7% (21 of 31) of CPC users evaluated them as satisfactory or very satisfactory (Table 13). The main reasons given by retailers for the negative evaluations are: spills and leaks (42.1% - 8 out of 19); bad

materials (31.5% - 6 out of 19); and lack of finishing (15.7% - 3 out of 19), aspects that also tend to affect the evaluation of internal appearance, as already mentioned.



Figure 12. Internal view of CPC. (Source: Author, 2012).



Figure 13. Internal view of CPC. (Source: Author, 2012).

The main reasons given by CPC users who positively evaluate these aspects are the fact that the CPC was well built (19.0% - 4 out of 21) and its simplicity (14.3% - 3 out of 21).

According to these users, the ordinary materials used are appropriate since the CPC was built with public funds. So far, the differences between retailers and CPC users may be explained by the far greater familiarity and knowledge of CPC space by the retailers, comparing to CPC users.

Table 13: Evaluation of the quality of construction and materials used in CPC (Source: Author, 2015).

	v.sat.	sat.	n.n.	uns.	v.uns.	m.r.	Total
Retailers A side	0	3 (17.6%)	5 (29.4%)	4 (23.5%)	5 (29.4%)	-	17
Retailers B side	0	2 (14.3%)	2 (14.3%)	5 (35.7%)	5 (35.7%)	-	14
Customers of shops	1 (9.1%)	7 (63.6%)	2 (18.2%)	1 (9.1%)	0	-	11
Customers of food court	0	7 (63.6%)	3 (27.3%)	1 (9.1%)	0	-	11
Users of bus terminal	0	6 (66.7%)	0	2 (22.2%)	1 (11.1%)	-	9
Retailers - total	0	5 (16.1%)	7 (22.6%)	9 (29.0%)	10 (32.3%)	21.95	31
Users of CPC - total	1 (3.2%)	20 (64.5%)	5 (16.1%)	4 (12.9%)	1 (3.2%)	41.05	31

Note. v.sat. = very satisfactory; sat. = satisfactory; n.n. = neither satisfactory nor unsatisfactory; uns. = unsatisfactory; v.uns. = very unsatisfactory; m.r. = mean rank values obtained through Mann-Whitney U non-parametric statistical test considering the group of retailers (31) and the group of CPC users (31).

The existence of correlation (Spearman, $c=.297$, $sig.=.019$) between retailers' and CPC users' levels of satisfaction with the CPC internal appearance and with the CPC indicates that satisfaction with the CPC is influenced by its internal appearance.

Aesthetics – Retailers' and CPC users' evaluations of the external appearance of the CPC

Regarding the external appearance of the CPC, 20.8% (20 out of 96) of the respondents (retailers, CPC users and architects) negatively evaluated View 1 (Figure 14), while 50% (48 out of 96) evaluated it as attractive or very attractive (Table 14). However, there is a statistically significant difference (Mann-Whitney U, $sig.=.000$) in the evaluation of View 1 among retailers, CPC users and architects. View 1 is evaluated as ugly or very ugly by 33.3% (11 out of 33) of the architects, by 25.8% (8 out of 31) of the retailers, and by only 1 (out of 32) user (Table 14). Therefore, View 1 is negatively evaluated by expressive proportions of architects and retailers.

View 2 (Figure 15; Table 14) is positively evaluated by 38.5% (37 out of 96) of respondents and negatively evaluated by 22.91% (22 out of 96) of them, with no statistically significant difference being found between retailers', users' and architects' evaluations. View 2 was negatively evaluated by 25.8% (8 out of 31) of retailers, by 24.2% (8 out of 33) of architects, and by 18.75% (6 out of 32) of CPC users.

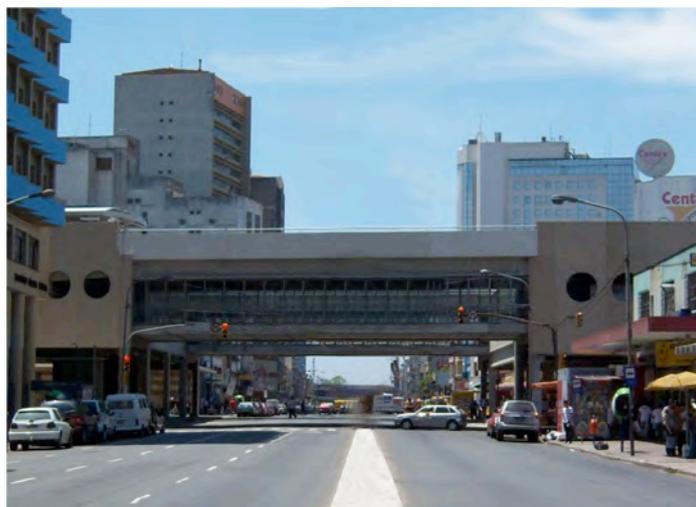


Figure 14. View from Av Julio de Castilhos with the CPC - View 1. (Source: Vanessa Dorneles, 2009).



Figure 15. View from Av Julio de Castillos without the CPC - View 2. (Source: Vanessa Dorneles, 2009).

When comparing the two views (Table 14), a significant percentage of the total respondents (33% - 32 out of 96) considers View 1 (with the CPC) uglier or much uglier than View 2 (without the CPC). A statistically significant difference (KW, $\text{Chi}^2=10.94$, $\text{sig}=.004$) was found in the evaluation of View 1 compared to View 2 between retailers, CPC users and architects, which shows that architects are the most dissatisfied with View 1 (Table 14), with 54.6% (18 out of 33) considering it uglier or much uglier than the View 2, followed by CPC users (25% - 8 out of 32) and by retailers (19.4% - 6 of 31). The main reason for 33.3% (6 out of 18) of architects and 50% of CPC users (4 out of 8) is the visual barrier created by the CPC, which negatively affected the landscape.

Table 14: Evaluation of the external appearance of the CPC (Source:Author, 2015).

	very beautiful	beautiful	n.b.n.u.	ugly	very ugly	m.r.	Total
EVALUATION OF VIEW 1: View from Av Julio de Castillos with the CPC							
Retailers	0	15 (47.2%)	8 (26.6%)	5 (15.9%)	3 (10.1%)	45.65	31
CPC users	1 (3.1%)	26 (81.3%)	4 (12.5%)	1 (3.1%)	0	65.38	32
Architects	2 (6.1%)	4 (12.1%)	16 (48.5%)	9 (27.3%)	2(6.0%)	34.82	33
total	3 (3.1%)	45 (46.8%)	28 (29.2%)	15 (15.4%)	5 (5.36%)		96 (100%)
EVALUATION OF VIEW 2: View from Av Julio de Castillos without the CPC							
Retailers	3 (9.7%)	7 (22.6%)	13 (41.9%)	6 (19.4%)	2 (6.5%)	45.66	31
CPC users	4 (12.5%)	14 (43.8%)	8 (25%)	6 (18.8%)	0	56.91	32
Architects	0	9 (27.3%)	16 (48.5%)	7 (21.2%)	1(3%)	43.02	33
total	7 (7.4%)	30 (31.2%)	37 (38.4%)	19 (19.8%)	3 (3.1%)		96 (100%)
EVALUATION OF VIEW 1 COMPARING WITH VIEW 2							
	m.m. beautiful	m. beaut.	n.n.	uglier	m. uglier	m.r.	Total
Retailers	4 (12.9%)	17 (54.8%)	4 (12.9%)	2 (6.5%)	4 (12.9%)	54.6	31
CPC users	5 (15.6%)	16 (50%)	3 (9.4%)	7 (21.9%)	1 (3.1%)	55.28	32
Architects	1 (3%)	9 (27.3%)	5 (15.2%)	15 (45.5%)	3 (9.1%)	36.2	33
total	10 (10.5%)	42 (44%)	12 (12.5%)	24 (24.6%)	8 (8.3%)		96 (100%)

Note. n.b.n.ugly = neither beautiful nor ugly; m.m.beautiful = much more beautiful; m.beaut.= more beautiful; n.n.= neither more beautiful nor uglier; m.uglier= much uglier; m.r.= mean rank values obtained through Kruskal-Wallis non-parametric statistical test among the groups of retailers (31), CPC users (32) and architects (33).

Security – Retailers’ and CPC users’ evaluations of security in the bus terminal of CPC, in the CPC building and in downtown Porto Alegre

The percentage of respondents (retailers and users of the CPC) that considers the bus terminal (42.37% - 25 out of 59) and the CPC (22.58% - 14 out of 62) as unsafe or very unsafe clearly decreases in relation to those (79% - 49 out of 62) that consider downtown Porto Alegre as unsafe or very unsafe. No statistically significant difference between such evaluations by retailers and CPC users was found. Downtown Porto Alegre is considered unsafe or very unsafe by 80.6% of retailers (25 out of 31) and by 77.4% of CPC users (24 out of 31) (Table 15). The CPC is considered unsafe or very unsafe by 25.8% of the retailers (8 out of 31) and by 19.4% of users (6 out to 31). In relation to the bus terminal, the results indicate that 44.4% of retailers (12 out of 27) and 40.7% of CPC users (13 out of 32) regard it as an unsafe or a very unsafe place. Therefore, considering that the former Square XV Camelódromo was in downtown Porto Alegre, it seems that the security of users and retailers has been improved in the new location in the CPC. However, perception of insecurity in the CPC building and, mainly, in the bus terminal is not negligible. Results suggest that the main reason for the difference in the perception of security in the CPC building and in the bus terminal is the perception of darkness in this terminal.

Table 15: Perceived safety of retailers and users of the CPC (Source: Author, 2015).

	very safe	safe	n.n.	unsafe	very unsafe	m.r.	Total
EVALUATION OF SECURITY IN DOWNTOWN PORTO ALEGRE:							
Retailers	1 (3.2%)	3 (9.7%)	2 (6.5%)	15 (48.4%)	10 (32.3%)	30.97	31
CPC users	0	3 (9.7%)	4 (12.9%)	15 (48.4%)	9 (29.0%)	32.03	31
total	1 (1.6%)	6 (9.7%)	6 (9.7%)	30 (48.4%)	19 (30.6%)		62 (100%)
EVALUATION OF SECURITY IN THE CPC BUILDING							
Retailers	3 (9.7%)	15 (48.4%)	5 (16.1%)	5 (16.1%)	3 (9.7%)	30.37	31
CPC users	0	22 (71.0%)	3 (9.7%)	6 (19.4%)	0	32.63	31
total	3 (4.8%)	37 (59.7%)	8 (12.9%)	11 (17.7%)	3 (4.8%)		62 (100%)
EVALUATION OF SECURITY IN THE BUS TERMINAL OF CPC:							
Retailers	1 (3.7%)	7 (25.9%)	7 (25.9%)	9 (33.3%)	3 (11.1%)	28.81	27
CPC users	0	12 (37.5%)	7 (21.9%)	11 (34.4%)	2 (6.3%)	31.00	32
total	1 (1.8%)	19 (31.7%)	14 (23.9%)	20 (33.8%)	5 (8.7%)		59 (100%)

Note. n.n. = neither safe nor unsafe; m.r.= mean rank values obtained through Mann-Whitney U non-parametric statistical test considering the group of retailers (31) and the group of CPC users (32).

CONCLUSIONS

The results obtained from the evaluation of the CPC configuration confirm the findings of other studies (e.g. Vargas, 2001; Rigatti, 2003; Zambellini, 2006) regarding the need for movement of people and visibility of shops to achieve a satisfactory sales performance. This study further corroborates results obtained by Lay and Oliveira (2007) showing that the way people buy goods and services and the way sellers try to reach their potential customers seems to depend on the spatial configuration of an urban grid. Similarly to the location of shopping streets along the highly locally integrated streets, Lay and Oliveira (2007) showed that even low-income residents (predominantly illiterates or with poor education) understand that accessibility and consequent visibility is a location attribute needed to successfully perform income-generating activities that require visibility and tend to instinctively locate such activities along these streets.

Based on the opinion of retailers, it was evidenced the need for location of shops at ground level, since their location on the second floor is disconnected from the movement of people on the streets. This is supported by Zambellini’s (2006) findings that shops on the second floor of the Oiapoque Popular Shopping Mall in Belo Horizonte did not achieve satisfactory sales performance. These findings also are in tune with Gehl’s (2011; p.99) arguments presented in his book “Life between buildings: using public space”: “In principle it is a bad idea to attempt to assemble activities by placing them above one another on different levels”. Moreover, the fact



that the CPC is located in an area slightly more beneficial to the movement of people than the former Square XV Camelódromo was not enough to prevent a reduction in CPC sales, due to its architectural configuration.

According to the results obtained, it can be inferred that the existence of the bus terminal in the CPC does not contribute to sales because the shops and the bus terminal operate independently, in different floors, with a small number of accesses on B side and very restricted visual connections that do not act as attractors to the shops on the second floor. As already mentioned, the success of sales, mainly those that are not basic necessities, depends on shops being visible and located in places with movement of people (Vargas, 2001).

The enclosed space of the CPC building is satisfactory for users due to the weather protection, comfort and safety, further contributing for shopping. The existence of the food court on the same floor of shops is a positive design characteristic, both for retailers and for users, by giving them the possibility of having meals without leaving the building, although the contribution of such food court to boost the sales is less evident.

The evaluation of CPC's overall appearance shows that internal appearance negatively affects retailers' and users' satisfaction with the CPC, mainly, due to poor quality of construction and materials used, the type of floors, walls and ceilings finishings and the lack of color, revealing the importance of these internal design attributes to user's satisfaction with a popular shopping mall. Complementary, the evaluation of CPC external appearance reveals a difference between architects and non-architects' aesthetics assessment, supporting results of some studies (e.g. Groat, 1982 apud Garling and Evans, 1991; Santos et al., 2011) but contrary to others (e.g. Reis et al., 2011) regarding the effect of type of college education on aesthetic evaluations. Nonetheless, the CPC creates a visual barrier for those in one of the busiest downtown streets and affect the urban aesthetics, which tend to be a negative design aspect for architects.

Considering that architecture and urban design deals with adequate relationships between elements in a building, between buildings and between buildings and open spaces, one can understand why the relationship of the CPC to other buildings and to the open spaces clearly tends to be negative for architects. Nonetheless, this clear tendency is not replicated for retailers and, especially, for users. While retailers do not have a clear negative or positive evaluation, the group of users has a clear tendency to positively evaluate the external appearance of the CPC. This may be, at least, partially explained by symbolic aesthetics. The CPC building, comparing to the former Square XV Camelódromo and even to the external appearance of buildings that constitute the built environment where many retailers and users live, may be associated with greater economic and social status, apart from its novelty (Santos et al., 2011).

Although perception of security in the bus terminal is negatively affected due to the lack of lighting, the enclosed space of the CPC building positively affects retailers' and users' perception of security in the building, when compared to perception of security in urban open spaces in downtown Porto Alegre.

Concluding, the results obtained in this study emphasize the need of understanding how buildings' location and configuration respond to users' requirements concerning use, aesthetics and security. Specifically, it shows the importance of assessing the impacts generated by current urban interventions such as popular shopping malls. The relocation of street vendors from downtown public open spaces in Brazilian cities to specific buildings, and the consequent liberation of public open space, seems to be satisfactory for city users. However, the configuration of popular shopping malls must conform to shopping requirements, taking advantage of the movement of people and creating meeting opportunities (e.g., Gehl, 2011; Ujang, 2014; Maimani, Salama, Fadli, 2014). Moreover, the design of a popular shopping mall must meet the needs and expectations of retailers and users as well as others, regarding its use, aesthetics and security.

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