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THE CONTRIBUTIONS AND CORRELATIONS OF TWO THEORETICAL MODELS FOR THE CONCEPT OF SOCIAL AND URBAN SUSTAINABILITY: RIO (2015) AND RIO AND AMORIM (2017)

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Abstract: The dialogical emergence of mesoanalytic rules as a potential guide to the interpretation of social phenomena, dynamic and complex in nature, is something new in the search for clues that help to polish the concept of sustainability, especially the Social and Urban Sustainability- SSU. In this sense, the present research sought to correlate two theoretical models of SSU, Rio (2015) and Rio and Amorim (2017), in order to identify the convergences and the contributions of each one to the construction of the SSU concept. In order to achieve this objective, a qualitative, exploratory and comparative study was proposed, in line with the Multivariable Analysis Theory and with the method known as Quantitative Propositional Analysis (APQ) for the transformation of qualitative and quantitative data. The results pointed to the convergence of the understanding of both on the structural bases of the SSU model through the use of mesoanalytic rules for the interpretation of complex social variables; Complexity Theory and Multilevel Analysis, the concepts of hospitality and hostility, and Learning Theories as fundamental tools for the search for a broader and deeper interpretive route of the complex social dynamics from which the SSU emerges. The conclusion indicated the reinforcement of the unique, complex, dynamic and cyclical character of the actions and norms of each community that one wishes to study, so that the conception of a theoretical model of SSU must be constantly tested, revised and developed, in line with reality of each community, in order to improve the emerging SSU concept.

Keywords: Mesoanalytic rules, social and urban sustainability, multilevel analysis, theory of complexity, theories of learning.

AS CONTRIBUIÇÕES E AS CORRELAÇÕES DE DOIS MODELOS TEÓRICOS PARA O CONCEITO DE SÓCIO SUSTENTABILIDADE URBANA: RIO (2015) E RIO E AMORIM (2017)

Resumo: A emergência dialógica de regras mesoanalíticas como guia potencial para a interpretação de fenômenos sociais, dinâmicos e complexos por natureza, é algo novo na busca por indícios que ajudem a polir o conceito de sustentabilidade, em especial, a Sócio Sustentabilidade Urbana - SSU. Nesse sentido, a presente pesquisa buscou correlacionar dois modelos teóricos de SSU, Rio (2015) e Rio e Amorim (2017), de modo a identificar as convergências e as contribuições de cada um na construção do conceito de SSU. De forma a alcançar este objetivo, foi proposta uma pesquisa qualitativa, exploratória e de estudo comparativo, alinhada à Teoria de Análise Multinível e com o método conhecido como Análise Proposicional Quantitativa (APQ) para a transformação de dados qualitativos em quantitativos. Os resultados apontaram para a convergência do entendimento de ambos sobre as bases estruturais do modelo de SSU através do uso de regras mesoanalíticas para a interpretação de variáveis sociais complexas; da Teoria da Complexidade e da Análise Multinível, dos conceitos de hospitalidade e hostilidade, e das Teorias de Aprendizagem como instrumentos fundamentais para a busca de uma rota interpretativa mais abrangente e profunda da dinâmica social complexa de onde emerge a SSU. A conclusão indicou o reforço do caráter singular, complexo, dinâmico e cíclico das ações e das normas de cada comunidade que se queira estudar, de modo que a concepção de um modelo teórico de SSU deve ser constantemente testado, revisado e desenvolvido, alinhado à realidade de cada comunidade, de forma a aprimorar o emergente conceito de SSU.

Palavras-chave: Regras mesoanalíticas, sócio sustentabilidade urbana, análise multinível, teoria da complexidade, teorias da aprendizagem.

LAS CONTRIBUCIONES Y LAS CORRELACIONES DE DOS MODELOS TEÓRICOS PARA EL CONCEPTO DE SOCIO SUSTENTABILIDAD URBANA: RIO (2015) Y RIO Y AMORIM (2017)

Resumen: La emergencia dialógica de reglas mesoanalíticas como guía potencial para la interpretación de fenómenos sociales, dinámicos y complejos por naturaleza, es algo nuevo en la búsqueda de indicios que ayuden a pulir el concepto de sustentabilidad, en especial, a Socio Sustentabilidad Urbana - SSU. En este sentido, la presente investigación buscó correlacionar dos modelos teóricos de SSU, Rio (2015) y Rio y Amorim (2017), para identificar las convergencias y las contribuciones de cada uno en la construcción del concepto de SSU. Para alcanzar este objetivo, se propuso una investigación cualitativa, exploratoria y de estudio comparativo, alineada a la Teoría de Análisis Multinivel y con el método conocido como Análisis Proposicional Cuantitativo (APQ) para la transformación de datos cualitativos en cuantitativos. Los resultados apuntaron a la convergencia del entendimiento de ambos sobre las bases estructurales del modelo de SSU a través del uso de reglas mesoanalíticas para la interpretación de variables sociales complejas; de la Teoría de la Complejidad y del Análisis Multinivel, de los conceptos de hospitalidad y hostilidad, y de las Teorías del Aprendizaje como instrumentos fundamentales para la búsqueda de una ruta interpretativa más amplia y profunda de la dinámica social compleja de donde emerge la SSU. La conclusión indicó el refuerzo del carácter singular, complejo, dinámico y cíclico de las acciones y de las normas de cada comunidad que se quiera estudiar, de modo que la concepción de un modelo teórico de SSU debe ser constantemente probado, revisado y desarrollado, alineado a la realidad de cada comunidad, para mejorar el emergente concepto de SSU.

Palabras clave: Reglas mesoanalíticas, socio sustentabilidad urbana, análisis multinivel, teoría de la complejidad, teorias del aprendizaje

Introduction

The search for a conceptual definition for the term “sustainability” and other analogies, such as the terms “sustainable” and even “sustainable development” is a topic that dates back to 1970 and, up until today, can't get an epistemological agreement (Lima, 2003; Mikhailova, 2004; Feil e Schreiber, 2017), and it's very likely that no other “concept has been quoted, argued and used so many times in so many researches.” (Mikhailova, 2004). According to Lima (2003), “the birth of the sustainability discourse stems as the dominant expression in debates related to environmental issues and social development, in an open sense.” The different research aspects that are present in the terminological race for the aforementioned concept, follow different paths according to the convenience of the chosen perspective in the way of one of the pillars in the triage of sustainability: economic, environmental and social. Therefore, according to Stepanyan, Littlejohn and Margaryan (2013) apud Feil and Schreiber (2017), “the meanings of this term varies in literature due to the quantity of perspectives and links with the context and area of action.”

The birth of the discourse that involves sustainability covers complex elements that look for an explanation through Positivism, meaning that it's based on traditional science aligned with systemic theory, where we look for causal explanations of social, behavioral and physical phenomena. However, according to Dimitrov (2003), this supposition may be accepted for artificial things, something created by humans, but in nature and society, it doesn't work. This is due to the complexity that is present on the system, requiring a more holistic view and a deeper consideration to search for a real comprehension of the process as an interdependent whole. To get there, complexity is linked to the study of mesoanalytic rules, linked to the Learning Theories and Multilevel Analysis, understood as a main medium to interpreting the acts and rules that stem from social, interactive and dynamic environments naturally.

Due to this chaotic scenario, this research's goal is to relate the two Social and Urban Sustainability (SUS) models, presented in this the study as models for the correct interpretation of the mesoanalytic rules for the SUS concept, which will be seen as a growing and relevant aspect of discourse, implicating the “sustainability” term. Therefore, the following question is established: What are the contributions to the theoretical model of the Social and Urban Sustainability (SUS) of Rio (2015) and Rio and Amorim (2017) when developing the concept of SUS? Even so, is there any evidence of correlation between the previous theoretical frameworks?

Theoretical Framework

Urban hospitality and hostility

As a topic of academic research, hospitality is quite recent. Congress, seminars and conferences related to the topic did not discussed it until the mid-2000s. Also, the limited accessible material related to the topic of hospitality is generally developed within the reach of domestic or commercial hospitality, which means that it is only related to the relationships taking place within a private space. There are only a few academics dedicated to urban hospitality focusing on topics related to public space, exercise of citizenship and the manifestation of public life (Severini, 2013).

Considering the idea that new urban acts will appear due to globalization, it's possible to identify new behavior codes and rules to study. Nonetheless, the paths to take in urban planning appear as new contemporary behavior codes and rules that stem from new acts determined by many factors; among them, we may highlight some that are heavily related to the behavior of a global society in cities (in differentiation to the behavior that may be seen in rural areas, where codes and rules are based on new standards, for example.)

According to Grinover (2006), the rules for use should be observed and preserved through the principles of hospitality, like guaranteeing every citizen access to devices and services, public transport, work, etc. These rules, which are basically hospitality rules through the articulation between public and private, imply relationships between different social groups, generations, families and individuals. These rules also express the values in which social community and collective experience are based within each period of time.

Something that seems convergent between academics about the topic related to the concept of urban hospitality considers the factor of "welcome" as the main guide for this event. As Grinover (2006) explains: "Hospitality presupposes acceptance: is one of the superior laws of humanity, is a universal rule. Accepting is permitting the inclusion of others in your own space, under certain conditions." Hospitality, as Jacques Godbout (1997) apud Grinover (2006) explain, is the gift of space; space to be read, enabled, crossed or contemplated.

On the other hand, Rio (2015) highlights that hospitality should be considered a "necessity" in our behavior, prior to rules. Same as this, peace (hospitality) should be prior to the state of war (hostility). At the same time, literature considers hospitality the law that regulates us, like a specific law unto foreigners in every country, defining new behaviors in the new environment.

The growing concept of Social and Urban Sustainability

The concept of SUS, even though it's still growing and, in this sense, is a continuous "reconstruction" phase, includes the idea of "balance" between three dimensions of sustainable development (social, economic and environmental) according to the correlated topics by Colantonio (2009) apud Rio and Amorim (2017). Therefore, when thinking about the SUS concept, Rio and Amorim (2017) present the idea of a "system", something organized and interactive, that encourages thinking on urban communities as social and sustainable spaces, combined with urban planning and sustainability. The concept also brings the integration of the learning process as a "medium" for the immersion of new rules and urban acts that revolt and regenerate with time, shaping the SUS concept.

The concept of learning, depending on the studied aspect, is present in the studies of Kolb (1997, 2005), Argyris y Schön (1974, 1978, 1996), Senge (1990), Bandura (1997), Wenger (1998, 2000), Templeton, Lewis and Snyder (2002) and Blackmore (2007), apud Rio and Amorim (2017), and reveal all their complexity as a definition due to the smallness that shouldn't be twisted with other concepts. Therefore, this concept shouldn't be mistaken with the conception of SUS, since this last one is configured as a "process itself", which means, a whole, a unit. The first one is characterized as the "medium" of this process, which means, a channel that interacts with the study of behavior, rules and individual acts as a collective; it covers the path of assimilation, incorporation and action execution (rules, acts) in the functional process of this complex system (Rio y Amorim, 2017).

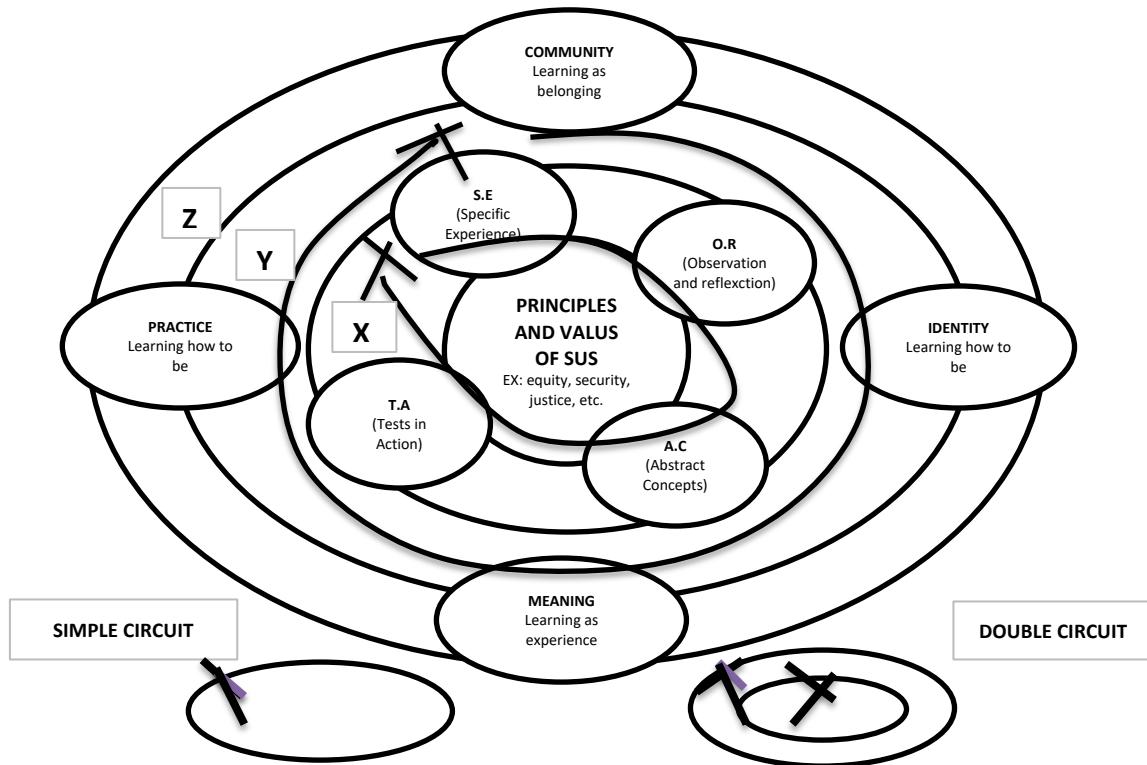


Figure 1. Theoretical model of Social and Urban Sustainability (SUS)

Note: Source: Rio and Amorim (2017).

In a recent work by the authors Rio and Amorim (2017) about the Social and Urban Sustainability (SUS) topic in which they proposed the construction of a theoretical model (figure 1) based on three Learning levels (individual, organizational and social), it was concluded that the “values and principles” of five SUS projects used in the preparation of this original study, all from Latin American communities, are included in the framework of practices adopted by the citizens of this societies.

In other study base, we find the social sustainability model created and implemented in Vancouver, Canada. In 2005, the municipal authorities of this city enacted a Social Development Plan; this was the first project of this kind that was implemented on an urban city level (Rio, Pedrozo and Turcato, 2014; Rio, 2015). The justification for using this model, according to the aforementioned authors, was: to get a sustainable society, the basic needs of the residents must be met, so it must have the ability to develop itself from its own resources, preventing and treating deviations sustainability, living on the present and guaranteeing the future.

The relevance of Vancouver’s sustainable social plan is due, precisely, to a declaration of values or principles that shape the development of more specific questions. On the other hand, the limited access to traditional criteria may compromise the search for performance indicators aligned with temporal reality, that has a dynamic nature. Therefore, the possibility that there haven’t been considerations about an important topic may undermine the legitimacy

of this model to be reproduced in other cities, even on the long run (Rio, Pedrozo and Turcato, 2014; Rio, 2015).

The paradigm of complexity

Complexity's paradigm focuses on the rich conceptual essence of non-linear science: science of turbulence and chaos, origins and fractals, auto-organization and critics, that impregnates traditional disciplines and counteracts the classic mechanism (Dimitrov, 2003; Kanso, 2015). This field of study covers numerous recent theories such as fractal theory, chaos theory, catastrophe theory and fuzzy logic, among others, come from exact sciences and approaches a vision that is closer to reality, without simplification nor reductions (Kanso, 2015; Torres, 2018).

The word "complexity", as Dimitrov (2003) shows, comes from the Latin word *complexus* which means "totality". In this way, the Science of Complexity focuses on the study of everything, in the completeness of dynamics: forces, energies, substances and shapes that are present in the whole universe as part of a net system, integrated, dynamic and interactive. Also, according to the previously mentioned author, there's multiple and different scales of representations of this complex net, including, specially, on micro and macro levels, but also individually and socially. Even though it's complex, it presents characteristic levels of regularities and similarities, creating the paradigm's conceptual essence that births emergent phenomena (Dimitrov, 2003).

The study of the Complexity Theory, according to Kanso (2015), when used as a synonym for Complexity Epistemology, has gained popularity through the pioneer study published by Edgar Morin, Isabelle Stengers and Ilya Prigogine, as well as the Computational Complexity Theory. From this point of view, according to Rio (2005), this study reveals the generic meaning in generalist logic from the concept of system, that allow us to highlight the influence that the parts (or individuals) have on the whole, due to their reflective enrichment. This can't be conceived through Systemic Thinking, which is deeply organized, goal-centered and predictive (Dimitrov, 2003).

Morin's thinking, as Salles and Matos (2017) identify, contributes to the clarification and belonging to the Complexity Theory when sharing and articulating disciplinary knowledge, so they can contribute to understanding the whole starting from here. Complexity is by itself a hard critic to linear models of today's way of thinking; rigid, mechanical, pragmatic, dead. It claims that it develops critical, reflective, holistic and transdisciplinary thinking, able to pointing out at the issues of current models, allowing a transformation, which Edgar Morin baptizes as "thinking reform", something created to relieve the true comprehension of "real" (Silva, 2011). Morin (1992) apud Rio (2015) suggest that the new, contemporary advances in our knowledge about organizations demand a radical reorganization of our knowledge organization. Like this, a critical approach to reductionism spirit appears, dominant in the science field.

Multilevel Analysis model

Multilevel Analysis model, just like Structural equation modeling, according to Collares (2011), can be described through many synonyms found in literature, just like the hierarchical linear modeling, the random ratio modeling, the varying components modeling, multilevel model, contextual analysis, linear mixed model; mixed effects model, random effects model and hierarchical regression (Laros and Marciano, 2008). According to Santos, Ferreira, Oliveira, Dourado and Barreto (2000), its use as tool to analyze complex data (mainly qualitative data and multiple empirical researches) dates back to the 70s, associated to the explosion of technological development that combined many publications about

generalized linear models (GLM), specially on the work of Wedderburn (1974), who proposed the use of more generic models with the inclusion of correlated data, that he named quasi-plausibility (Santos et al. Al, 2000).

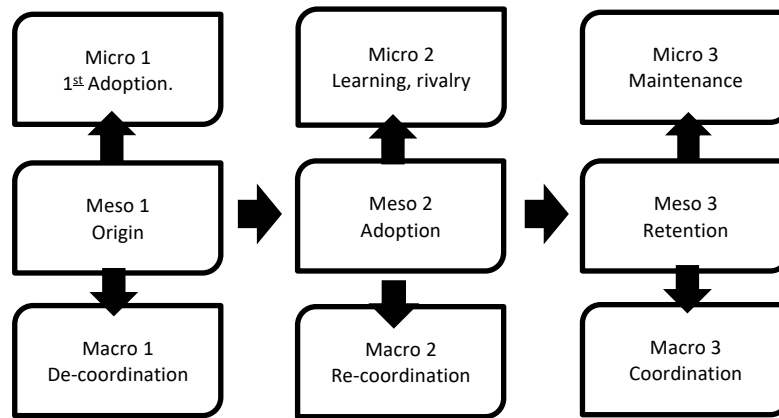


Figure 2. Analytical structure halfway in the journey

Note: Source: adapted from Dopfer, Foster and Potts (2004) apud Rio (2015)

Multilevel Analysis counts on the inclusion of local predictive variables on different levels (Santos et al, 2000; Laros and Marciano, 2008; Collares, 2011; Eto, 2013; Mendonça, Cunha and Nascimento, 2013; Rio, Pedrozo and Turcato, 2014; Rio, 2015; Rio and Amorim, 2017). Geels (2002; 2004; 2006) apud Mendonça, Cunha y Nascimento (2013), observe multilevel Analysis, emphasizing mainly the influence process in different directions from three dimensions: micro level, where radical innovations are formed, according to the literature quoted by Eto (2013). Level 1 (micro or niche) regards the explanatory variables from the lowest level, which is the level of the people that compound the study. The mesolevel, the one of socio-technical regimes is, according to Dopfer et al (2004) apud Rio (2015), derived from evolution economy and allows to associate the use of algebraic (or mathematical) study, passing through the knowledge-process idea, that differs from the engineering or control analysis, as well as a connection between micro and macro scales. Lastly, the macro level, is the level of scenarios and structural changes of society as a whole (Mendonça, Cunha and Nascimento, 2013).

On the horizontal line of figure 2, there's the middle point of the research's study, which is the mesolevel structure. This is where collective behavior defines the individual's functional patterns, let's say, how do they work as an organization, being the middle ground that connects individual levels (micro level - figure's top axis) with the dynamic of wider levels (macro level - figure's bottom axis). This is reinforced by Puente-Palacios and Laros (2009), who teach that, in general, levels could be described as social attachés, which are collectives with significant effect on its member's behavior. Therefore, individuals can constitute the lower level; the context of collectivity where they're inserted would be the top level (Puente-Palacios y Laros, 2009).

Material and Methods

The approach used in this research is qualitative and exploratory, with the proposal of a comparative analysis between the SUS model created by Rio and Amorim (2017) and the

SUS model constructed by Rio (2015), being this last one a framework linked to the study of the Open City of Valparaíso, Chile. As Gerhardt and Silveira (2009) teach, “qualitative research has nothing to do with numerical representation, but with the deepen in comprehension of a social group, organization, etc.” In this case of originality and specificity, it was considered the most appropriate for interpreting numerous complex social elements present in both models, once the inherent limitations of the positivist model were observed; this model is also known as “single research model.” Therefore, qualitative research focuses on reality aspects that can’t be quantified, centered in understanding and explaining the dynamics of social relationships” (Gerhardt and Silveira, 2009).

The goal of this research is finding the contributions of the SUS theoretical models proposed by Rio (2015) and Rio and Amorim (2017) to achieve the refinement of the concept “sustainable”, and identifying the correlations among them. Therefore, it would be needed to resort to synthesis that shapes the essence of the SUS model produced by Rio and Amorim (2017), where the model base is formed by three Learning Theories that integrate it: individual, organizational and social. Also, it would be needed to use the work condensation on a SUS published by Rio (2015), particularly, the description of the results obtained in this study. These aspects are key to allow greater clarity and resiliency when proposing the results that generate from the methodology adapted by the present research.

It’s important to emphasize the uniqueness of the proposed work, since it’s an empiric research that uses the analytical tool called Multilevel Analysis Theory, considered appropriate for this mix of complex variables. Also, it’s needed to highlight that Multilevel Analysis can acquire different propositions and implementation facets, since one must consider the size of the sample object that will be studied. Nevertheless, according to Deslauriers (1991) apud Gerhardt and Silveira (2009), “the goal of this sample is producing exhaustive and illustrative information: whether it’s small or big, the important thing is that it must be able to produce new information.”

In this sense, being aware of the limits of the presented sample in the proposed research, and keeping in mind all the specificity and complexity that surrounds it as well as the restrictions that may appear so the results identified here can be extended to other sample realities, it was decided to use the Multilevel Analysis chain that uses the method known as Quantitative Propositional Analysis (QPA). “This technique is a key tool on multivariate analysis for multivariate analysis for a group of qualitative data due to its facility to be interpreted” (Madeira, Lopes, Giampaoli y Silveira; 2011). The purpose of this qualitative research is promoting the understanding of complexity and the interaction with the research problem without focusing mainly on statistics” (Madeira et al, 2011).

Results and Discussions

Contributions of the model by Rio (2015) to the SUS concept

According to the conclusions on Rio’s research (2015), the SUS concept must be considered a complex, dynamic, cyclic and mesoanalytic process, also it must be original and adapted to the reality of each community to be interpreted. When looking at all these elements as a complex and independent net, according to the author, a more flexible reading of the concept is possible, obtaining the needed comprehension to reach all the potential that the created knowledge has. When proposing a dialogical emergency of mesoanalytic rules based on the hospitality and hostility principles in urban communities - Figure 3, recognizes that the

values perceived by the authors must be understood as particulars, this means that they can't be interpreted or copied outside that community. This is explained thanks to the fact that there's different scales and development levels that social workers must consider and revise constantly.

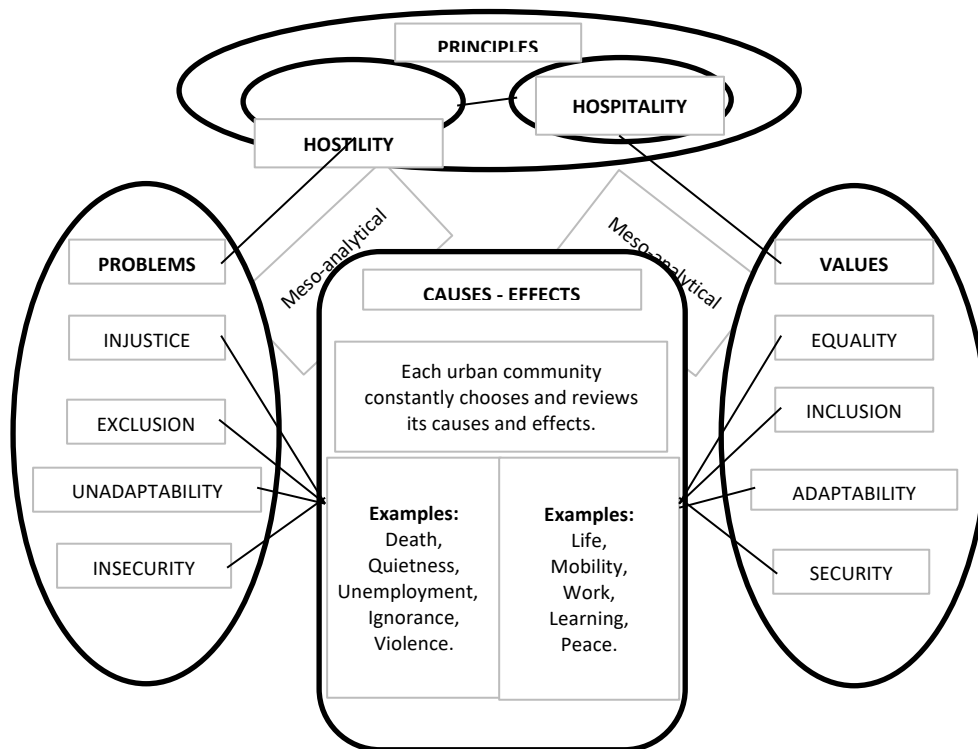


Figure 3. Dialogical Emergency Model of Mesoanalytic Rules based on hospitality and hostility.

Note: Source: Rio (2015)

Rio's interpretation of the SUS model (2015) considers two kinds of mesoanalytic rules articulated with criteria: when connecting the principles with the criteria or value problems, it's a long-path rule (A); when linking value criteria with cause-effect and problems with cause-effect, therefore they're short-path rule (B). The difference between both types is that the long-path rule (A) needs more time to put the learning into practice due to the creation, adoption and rule retention process, which requires a higher reflection level. On the other hand, the short-path rule (B) undergoes a quicker transformation because it's more frequent, the dialogs are common. The numerated stars in figure 3, on the other hand, correspond to 8 principles of the Complexity Theory; to get more details, see Rio's (2015) whole research.

Model contributions of Rio and Amorim (2017) to the SUS concept

Rio and Amorim (2017) proposed the development of a theoretical model for SUS based on three lines of the Learning Theory: individual, organizational and social. The use of Learning Theories to sustain the model proposed by the authors is due to the knowledge that SUS is a learning process, since we can dive into the comprehension of these constructions can make possible to find a route, a way where we can observe how it happens. This process must be cyclic and original for each urban community that wants to be studied. As the authors pointed out, environmental and sustainable problems are, generally, analyzed on very few occasions. Researchers prioritize one of the elements of the sustainable tripod: environment, society, economy, some more, some less, according to their reflections about diverse questions.

From this perspective, Rio and Amorim (2017) consider the adoption using Learning Theories, something never done before, to offer strength and depth to the creation and interpretation of the proposed SUS model, through the recognition of complexity involved in constituent variables that stem from selected doctrines. Also, even though the elements of the doctrines are different the ones from the others, they complement each other and allow us to reach a clearer and more defined comprehension in the middle of the complexity of the problem found in the research. The proposal of a framework that analyzes the learning process, more integral on the mesoanalytic scale, involved elements of the city and the citizens. The interaction between these mediums, a turbulent paradigm from the perspective of social sustainability, was analyzed to comprehend how interactions, social relationships and collaboration nets can conduct to a SUS community and the life quality of citizens.

Figure 1 - The SUS theoretical model, already identified in chapter 2.2, represent the model proposed by Rio and Amorim (2017) to understand the SUS concept seen through the three Learning Theories used, which is used as a tool of deep analysis for the most variable levels of SUS design according to the most diverse realities of urban cities. Finally, Rio and Amorim (2017) conclude that the Learning Theories can and must influence directly on the social-sustainable development, understood as a model of cyclic and continuous learning. Since it's a dynamic, independent, complex and constantly reviewed process, it must be adapted to the reality of each urban community that it's to be analyzed, under the risk of not achieving the initiated objectives.

Correlations between the SUS models of Rio (2015) and de Rio and Amorim (2017)

The deep research of dialogical emergencies of a SUS generic model based on the inherent research of mesoanalytic rules can be highlighted as the main point of a route used by both authors on their respective researches.

A proof of this is that both studies were based on the Complexity Theory and Multilevel Analysis, this one was a main tool to properly research and interpret the different phenomena that stem from complex environments. Even though the research by Rio and Amorim (2017) doesn't use, explicitly, the Multilevel Analysis tool as research element of their model, the insertion of Learning Theories as model foundation suggests a complex reflection that's only possible trough Multilevel Analysis.

Table 1
Mesoanalytic rules based on the Learning Theories

Survey model applied on Rio's research on SUS (2015)		SUS model by Rio (2005)	SUS model by Rio and Amorim (2005)		
Rule type	Proposed question to analyze the behavior of the survey respondents	THEME/AUTHOR	THEME/AUTHOR		
(I) Cognitive rules of citizens	Gadget inception How to construct schemes, mechanisms and structures	Rule Taxonomy (Dopfer, 2004)	Individual Learning (Kolb)		
Mental models	Which models stem from the minds of open citizens?				
Learning models	How do they learn based on these models?				
Heuristics	How do they create and discover those models				
Algorithms					
(II) Behavior Rules of Citizens/Organizational Behavior Rules	Individual behavior How do they solve problems?				
Creating and adopting the rule	How does the double contingency of relationship between citizens and citizens with objects appear?				Social Learning (Wenger)
Collective behavior	How's the creation and adaptation process of a rule?				
Dependency of rule frequency	How does the urban community behave in different situations?				
Behavioral parameter	Is there a dependency on rule frequency?				
(III) Technical Organizational Rules	Are there any fixed variables to be considered when researching the rules of this community?				
Organizational Architecture	Devices Which are the rules for objects or machines?		Organizational Learning (Argyris and Schön)		
Technology, design, machines and equipment production	How is it organized?				
Technology, design, machines and equipment production	Can the creation process of architectonic environments be described?				

Note: Source: Adapted from Rio (2015)

The questionnaire model of the mesoanalytic route for the study of SUS for this community by Rio (2015) brings essential elements that cross the structural lines of the Learning Theories found in the Learning Theory's structural lines, found in the research by Rio and Amorim (2017). The last one acts as an alternative followed by Rio (2015) on its research for this community, where it warns about the limits of his research and proposes action possibilities to look for a SUS generic theoretical model that's reinforced by the emergence of mesoanalytic rules through Learning Theories, seen as central elements to understand these social phenomena by both authors.

Something interesting detected by Rio and Amorim (2017) is the conceptual confusion regarding some terms, including sustainability. These authors observed the difficulties found when mentioning that expression, due to the multiple faces that this concept can acquire according to the perception of each expert and academics on the topic. This can be clearly identified on the graphic sequence 1, 2 and 3, that shows the conceptual comprehension that average people have regarding a specific topic. In this case, data (extracts) were used in Rio's survey (2015) regarding the results obtained on the table 1.

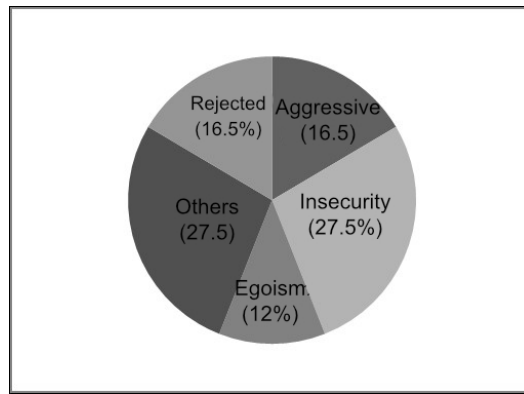


Figure 4. Hostility concept according to the survey respondents of Rio (2015)

Note: Source: Authors

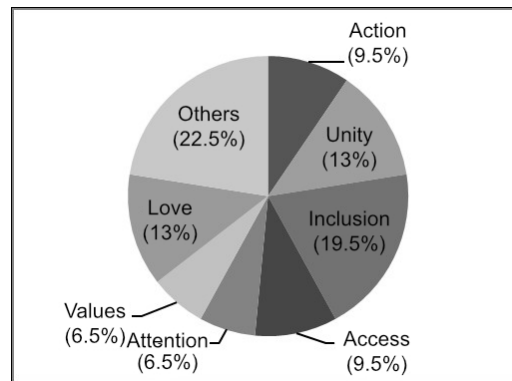


Figure 5. Hospitality concept according to the survey respondents of Rio (2015)

Note: Source: Authors

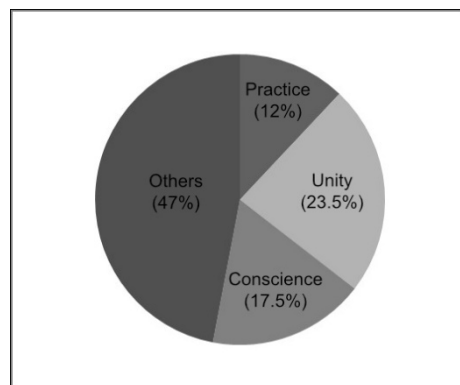


Figure 6: SUS concept according to the survey respondents of Rio (2015)

Note: Source: Authors

Figures 4, 5 and 6 consider the obtained evaluation applying the questionnaire and their respecting answers according to the samples of this research. On each open answer they looked for one or more elements that synthesize the reasoning of the interviewee about the applied question during the interview with the researcher. After the content (the interviewees discourse) was summarized, the segmentation of different responses on multiple questionnaire sections allowed to find simple and common expressions and, in many cases, typeset expressions; this means more than one definition per interviewee. This search for proposition (extracts) through the Quantitative Propositional Analysis (QPA), allowed to identify

elements that are associated to the conceptualization of each topic exposed by this research according to the data presented by these graphics.

Something eye-catching when you revise the graphics, specially the graphic 3, is the remarkable consensus that blurs the SUS concept. This is on the same page as the argument presented by both studies, where said concept is declared as a term in a constant and dynamic (re)building process. Also, the essence of this mesoanalytic study found in both models follows a route based on the weight and the dynamic of complexity, that can only be analyzed from the emergent inquiry of the rules of innovation tracking combined with the Multilevel Theory. This means, that the research about Multilevel Analysis by Dopfer (2004) and the Complexity Theory by Morin (1992, 1999, 2003, 2004, 2007, 2011, 2013), found in the research of Rio (2015) are linked positively with the Learning Theories by Kolb (individual learning), Argyris and Schön (organizational learning and Wegner (social learning), emphasized by Rio and Amorim (2017).

Final Considerations

The search for a generic theoretical model of SUS that could be used as a parameter to study the mesoanalytic rules of learning in urban communities, especially those underdeveloped economically, is a growing and relevant topic that has the goal to determine information that may be useful to interpret the complex and deep dynamic of today's societies to reach auto-sustainable development. In this sense, the present research was developed with the main goal to linking the SUS models of Rio (2015) and Rio and Amorim (2017) to contribute to the SUS concept.

This "test" was considered compulsory because it links the convergence of mesoanalytic rules with the most assertive interpretation of this growing phenomenon. Following this path, this research was developed presenting existing concepts in both SUS models, like the Complexity Theory and Multilevel Analysis, even though these topics aren't mentioned explicitly in the study of Rio and Amorim (2017). Nevertheless, due to this being a complex topic, this work seeped into both concepts when setting the theoretical foundation in Learning Theories, something that was seen as new in the interpretation of mesoanalytic rules.

According to both authors, other topic to be highlighted is understanding that the SUS concept is a new, recent and growing phenomenon, and therefore it must be experimented constantly, cyclic and (re)constructive. On the same line, the dynamics of innovation tracking is a highly potential alternative that can allow a deeper reflection about how learning social interactions occur in the SUS models. This is incredibly relevant from the point of view of implementing possible public politics for community development through the dreamed path of sustainability. On the other hand, this is a topic observed by two previous studies, where the citizen must be considered a central element of the paradigm when looking for the quality of a fulfilling life.

To link the SUS models and identify possible application traces, Multilevel Analysis methodology was proposed, seen as key to interpret correctly the deep and complex qualitative data of the present research, that complies with understanding. Morin (1992) apud Rio (2015); Dimitrov (2003); Dopfer (2004) apud Rio (2015); Silva (2011); Mendonça, Cunha and Nascimento (2013); Kanso (2015); Torres (2018). Also, The Quantitative Propositional Analysis (QPA) was also used to determine quantitative data, even though this wasn't the main goal of the study.

In this sense, one of the recommendations found in the research by Rio (2015) was proposing more studies about mesoanalytic rules through the inclusion of Learning Theories in the SUS theoretical model to improve the development, interpretation and application. The research by Rio and Amorim (2017) put under the spotlight this possibility when basing their theoretical foundation in deepening these conduct theories. Clearly, studies by the authors about the SUS models must be revised, refined and continuously checked in other realities to extend their application.

Therefore, even though both authors of both researches considered it as evidence, unusual characteristics of originality and cyclic character in which the development processes of each community happen, in a singular sense, that include the learning processes described by Dopfer (2004) apud Rio (2015); Kolb (1997, 2005), Argyris and Schön (1974, 1996), Wenger (1998, 2000) apud Rio and Amorim (2017). This is needed so an interpretative proposal to be carried out is aligned with all the complexity and deepness ever-present in a dynamic, independent and evolving environment.

Nevertheless, as both authors previously pointed out while having the problem presented in this research, the development of generic theoretical models proposed by the SUS must be polished constantly so it fits the interpretative form in a deeper and more real way. Like this, both studies are used as a guide to carry out researches about the development of the SUS, but they can't be considered static and rigid SUS models, since the dynamics of development (evolution) can't be explained only in systemic models, restrictive in the superficial aspect of things.

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